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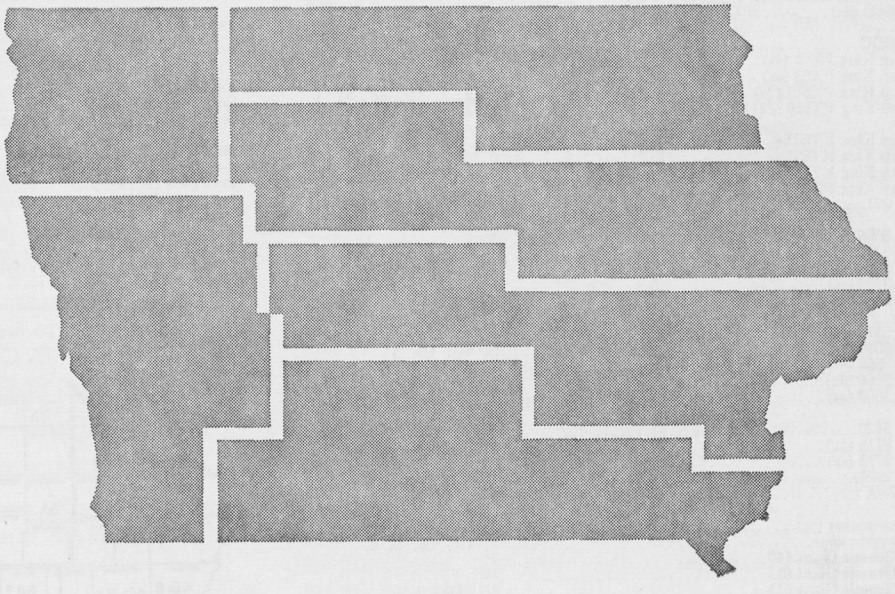
CONTENTS

1967 IOWA CORN YIELD TEST



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Cooperative Extension Service
in cooperation with
Agriculture and Home Economics Experiment Station,
Iowa Crop Improvement Association
and the
Crops Research Division,
Agricultural Research Service,
United States Department of Agriculture

INDEX OF ENTRIES

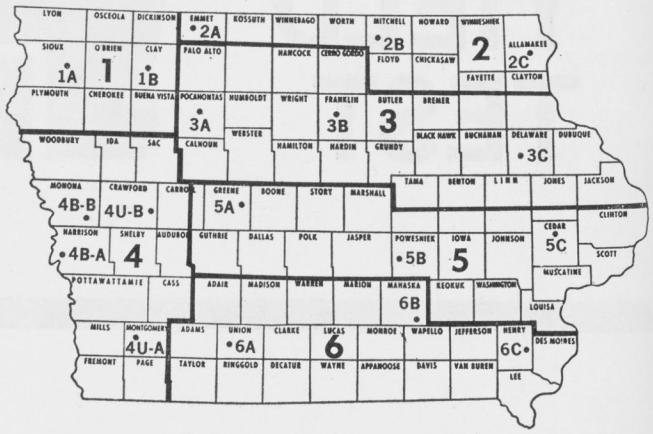
sx = single cross
3x = 3-way cross

Designations identifying all brands in the yield test are listed below and are opposite the name and address of the entrant.

Designation	Name and address of entrant
	Open Pedigree
AES	Iowa Crop Improvement Assn., Ames
Iowa	Iowa Crop Improvement Assn., Ames
Minhybrid	Iowa Crop Improvement Assn., Ames
	Closed Pedigree
Burts	Burton E. Stukas, Spencer
Cornelius	Cornelius Hybrid Corn Company, Bellevue
Corn King	Malcolm H. Grieve, Pierson
Dockendorff	Max Dockendorff, Danville
Iowa State	Iowa State Hybrid Corn Company, Elkhart
Maygold	Earl May Seed Company, Shenandoah
McAllister	McAllister Seed Company, Mt. Pleasant
Middlekoop	John Middlekoop, Packwood
NC+	NC+ Hybrids, Lincoln, Nebr.
Northrup King	Northrup King & Company, Minneapolis, Minn.
Pioneer	Pioneer Hi-Bred Corn Company, Des Moines
Stewart	Stewart Hybrids Inc., Princeville, Ill.
Stull	Stull Brothers Inc., Sebree, Ky.
T-E	Taylor-Evans Company, Tulia, Texas
Tomco Genetic Giant	Tomco Genetic Giant, Inc., Belmond
United-Hagie	United-Hagie Hybrids, Inc., Des Moines

Pedigrees of the open-pedigree varieties listed in the tables.

Variety	Pedigree
AES 704 (ICIA)	(Wf9 x Oh43) x (B14A x B37)
AES 801 (ICIA)	(Wf9 x B7) x (B10 x B14A)
Iowa 4417 (ICIA)	(Wf9 x M14) x (B8 x W153R)
Iowa 5480 (ICIA)	(Wf9 x M14) x (A239 x R168)
Iowa 5496 (ICIA)	(Wf9 x M14) x (B14A x R168)
Iowa 5563 (ICIA)	(B14A x W64A) x (B9A x W153R)
Iowa 5654 (ICIA)	(Wf9 x A257) x (B14A x B37)
Iowa 5664 (ICIA)	(B14A x W64A) x (Oh51A x B9A)
Iowa 5676 (ICIA)	(Wf9 x M14) x (B59 x R181)
Iowa 5772 (ICIA)	(Wf9 x B37) x (B54 x B56)
Iowa 5793 (ICIA)	(B14A x C.I.31A) x (B37 x B56)
Iowa 5797 (ICIA)	(B14A x C.I.31A) x (B37 x R101)
Minhybrid 417 (ICIA)	(B14A x A239) x (M14 x W64A)



District 4B—Bottomland; 4U—Upland.

Fig. 1. This map shows the district arrangement and location of fields in 1967.

THE 1967 IOWA CORN YIELD TEST[1]

by M. T. Hillson and C. D. Hutchcroft[2,3]

The results of the Iowa Corn Yield Test are published to aid Iowa farmers in selecting corn varieties adapted to their farms. This is the forty-eighth consecutive year for the Iowa Corn Yield Test since it began in 1920. A picker-sheller has been used to harvest a majority of fields since 1960 and on all fields since 1965.

Individual-year yield data are presented for corn varieties entered two or more consecutive years in a district. One-, 2- and 3-year yield averages are presented in tables 1 through 6 for both high and moderate plant populations for each district. Information concerning other attributes of the entries tested also are listed in tables 1 through 6. This is the fifth year of the district arrangement shown in fig. 1 and the fifth year in which all entries are compared at both high and moderate plant populations at each location.

The presentation of data for the varieties tested does not imply approval or endorsement by the authors or by the agencies sponsoring or conducting the test. The entry names listed in the tables are their brand and variety designations.

LOCATION OF TEST FIELDS

The state was divided into seven districts in 1967 (fig.1). Districts 4 Upland and 4 Bottomland are considered separate districts. All test fields within the districts were planted at moderate and high population levels. Appropriate lattice designs were used in each field.

Districts 1, 4 Upland and 4 Bottomland each had two fields that contained four replications of each variety at both population levels. Districts 2, 3, 5 and 6 each had three fields containing three replications of each variety at both population levels. Two additional test fields, one at Ankeny and one at Kanawha, were planted to compare relative maturity among varieties.

Table A lists the name and address of each cooperator in 1967 and also the planting and harvesting dates for each field for the past 3 years.

PROCEDURE

Entries

The following groups were eligible to enter the Iowa Corn Yield Test: Producers of seed, the Iowa Crop Improvement Association, Iowa State University and the United States Department of Agriculture, and Iowa farmers.

A seed producer was eligible to make up to nine entries per district; of these entries, three had to be available in quantities of 10 bushels or more, two in quantities of 500 bushels or more and four in quantities of 1,000 bushels or more. No entry was accepted if less than 10 bushels of seed were available. Entries submitted by Iowa farmers had to be entered by no fewer than five farmers to be eligible.

Seed for testing was obtained by representatives of the Iowa Crop Improvement Association from supplies for sale. Each sample was taken from several bags. The entries were then given a random entry number for each district and were identified only by this number throughout the test.

Planting Method

Field 3B was hand planted in 36-inch rows. Fields 1A, 1B, 2A, 2B, 2C, 3A, 5A, 5B, 5C, 6B and 6C were hand planted in rows 38 inches apart. The remaining fields were hand-planted in 40-inch rows.

The plots were 2 rows wide and 15 5/6 feet long for 38-inch row-width plots. For moderate population stands, two kernels were planted every 19 inches in the row when the row width was 38 inches and every 20 inches when the row width was 40 inches; an extra kernel was planted in each of the end hills. At this planting rate, 40 kernels were planted in each plot. This is equivalent to 15,680 kernels per acre where 40-inch row widths were used, or 17,360 kernels per acre where row widths were 38 inches. For high-population stands, three kernels per hill (54 kernels per plot) were planted. This is equivalent to 21,168 kernels per acre at 40-inch row widths and 23,436 kernels per acre at 38-inch row widths. The 36-inch rows were planted with 40 and 54 kernels per plot for moderate and high stands. To make the plant population equivalent to that of a 38-inch row, the moderate stand was thinned to 36 plants, and the high stand was thinned to 48 plants per plot.

Performance Data

Stand percentage was determined by dividing the number of plants present at harvest by the number of kernels planted and multiplying by 100. Root-lodged and stalk-lodged plants and the number of dropped ears were counted and recorded just before harvest. Plants broken below the ear were called stalk-lodged; plants leaning more than 30 degrees from upright were called root-lodged.

Maturity comparisons of all corn varieties tested in districts 1, 2 and 3 were made at Kanawha in Hancock County, and at Ankeny in Polk County for entries

[1]Project 1170 of the Iowa Agriculture and Home Economics Experiment Station. The Iowa Corn Yield Test is conducted cooperatively by the Iowa Crop Improvement Association; Department of Agronomy, Iowa Agriculture and Home Economics Experiment Station; and the Crops Research Division, Agricultural Research Service, United States Department of Agriculture.

[2]Respectively, associate in agronomy; secretary of the Iowa Crop Improvement Association and associate professor of agronomy.

[3]The authors wish to express their appreciation to the following for their cooperation and assistance: Joe L. Robinson, Kenneth Barger, Adin Rouze, Oliver Knott, Kevin Bonnicksen, Nick Kruse, Juel Haaland. Ray Berve, members of the Department of Agronomy and USDA Corn Breeding group of Iowa State University and the cooperators on whose farms the tests were conducted.

TABLE A. NAMES AND ADDRESSES OF 1967 COOPERATORS AND PLANTING AND HARVESTING DATES FOR 1965, 1966, and 1967.
Harvested with picker-sheller unless indicated as hand harvested (H).*

Field	Cooperator	Address	Planted			Harvested		
			1965	1966	1967	1965	1966	1967
1A	Alvin Linch	Sheldon	May 14	May 14	May 15	Nov. 2	Oct. 20	Oct. 19
1B	Ray Paulsen	Everly	May 7	May 6	May 3	Oct. 9	Oct. 21	Oct. 18
2A	John Greig	Estherville	May 19	May 2	April 28	Oct. 7	Oct. 18	Oct. 17
2B	Leonard & Howard Thoresen	Osage	May 18	May 16	May 17	Nov. 18	Nov. 4	Nov. 15
2C	Walter Hagen	Waterville	May 13	May 7	May 13	Nov. 17	Nov. 3	Nov. 13
3A	Joe Reigelsberger	Rolfe	May 6	May 2	May 3	Nov. 3	Oct. 17	Oct. 16
3B	Lawrence Hamilton	Hampton	May 20	May 27	May 19	Nov. 19	Nov. 14	Nov. 16
3C	Francis Childs	Manchester	May 10	May 7	May 8	Nov. 11	Nov. 2	Nov. 10
4U-A	Rollin Bass and Max Naylor	Emerson	May 7	May 4	May 11	Oct. 21		
4U-B	Merle Thiedeman	Westside	May 19	May 16	May 15	Oct. 28	Nov. 11	Oct. 23
4B-A	Carroll Griffis	Mondamin	May 3	May 5	May 4	Oct. 25		Oct. 20
4B-B	Richard Riddle	Ute	May 14	May 16	May 15	Oct. 26	Nov. 8	Oct. 24
5A	Royal Holz	Grand Junction	May 20	May 6	May 5	Oct. 29		Oct. 25
5B	Ray Tokle	Grinnell	May 15	May 10	May 12	Oct. 12	Oct. 27	Nov. 7
5C	Dick Elijah	Clarence	May 17	May 20	May 9	Nov. 9	Oct. 31	Nov. 20
6A	Ed Hanrahan and Gene Dunphy	Creston	May 7	May 3	May 16	Oct. 18		Nov. 4
6B	Maurice Beaver	Cedar	May 11	May 9	May 2	Oct. 14		Nov. 8
6C	Sam Redfern	New London	May 13	May 9	May 10	Nov. 5	Oct. 28	Nov. 9
Northern maturity	Sy Angstrom (ISU Clarion-Webster Exp. Farm)	Kanawha	May 5	May 3	May 2	Sept. 21 (H) Nov. 4	Sept. 23 (H) Nov. 7	Sept. 28 (H) Oct. 30
Southern maturity	Bob Patten (ISU Ankeny Research Farm)	Ankeny	May 1	April 29	April 27	Sept. 15 (H) Oct. 15	Sept. 22 (H) Oct. 26	Sept. 27 (H) Nov. 6

*Ten ears hand harvested from each plot to determine moisture at approximate physiologic maturity (60 days after silking).

tested in districts 4 Upland, 4 Bottomland, 5 and 6. The maturity comparisons are presented in tables 7 and 8. Data were taken for three characteristics: (1) date in July when 50 percent of the plants had visible silks, (2) moisture percentage of the corn grain 60 days after the average date of silking for the test field and (3) moisture percentage of the corn grain on the average harvest date for the area.

Harvest

All entries at all locations were tested at moderate and high plant population levels (approximately 17,360 and 23,440 kernels per acre at 38-inch row widths). An average of 14,700 and 19,400 plants per acre survived at harvest in 1967.

Seventeen district test fields were harvested in 1967, 13 in 1966, and 18 in 1965. Yields were determined by weighing the shelled corn from each plot and adjusting to No. 2 corn at 15.5-percent moisture. No adjustments were made in yield because of variations in stand percentage.

The plots were not gleaned for dropped ears or for ears missed when harvested. A sample of shelled corn from each plot was placed in a moistureproof bag, and moisture determinations were made later with a Motomco 919 moisture meter.

NUMBER OF ENTRIES PER DISTRICT

Thirty-four individuals or concerns made 353 district entries in 1967. In 1966, 432 district entries were made by 21 individuals or concerns.

The number of entries in each district for 1967 is shown in table B.

Table B. Entries in Each District, 1967.

District	Entries	District	Entries
1	56	4 Bottomland	36
2	49	5	64
3	56	6	56
4 Upland	36	TOTAL	353

Table C shows the percentages of varieties that were single crosses and 3-way crosses since 1962.

Table C. Percentage of Single Crosses and 3-Way Crosses.

	Percentage single crosses	Percentage 3-way crosses	Total percentage
1962	10.1	3.1	13.2
1963	17.0	3.6	20.6
1964	21.6	8.7	30.3
1965	28.8	13.1	41.9
1966	25.0	19.2	44.2
1967	45.6	24.1	69.7

SOIL FERTILITY

Soil fertility information and crop rotations for the 1967 test fields are presented in table D.

Each cooperator was given a fertilizer suggestion for his plot. The fertilizer suggestions are listed by both elemental and oxide forms of P and K. These suggestions include the high-rate fertilizer recommendations plus an additional 60 pounds of N, 18 pounds of P (40 pounds of P_2O_5) and 35 pounds of K (40 pounds of K_2O) where needed. Such rates are recommended by Iowa State University when the following conditions exist: (a) present yields average 100 to 125 bushels of corn per acre, (b) final plant populations of 16,000 to 22,000 plants per acre, (c) average response to fertilizer, (d) above-average crop and soil management and (e) favorable price relationships between fertilizers and crops.

TABLE D. SOIL FERTILITY INFORMATION FOR 1967 TESTS.

Field	Crop rotation (1967 corn on right)	Soil test results			Fertilizer suggestions* (lbs./A.)					Fertilizer applied by co-operator for 1967 crop**				Leaf analysis results		
		N	P	K	N	P	K	P_2O_5	K_2O	Manure T./A.	N lbs./A.	P_2O_5 lbs./A.	K_2O lbs./A.	%N	%P	%K
1A	CDCSbC.....	Low	VL-L	M-H	140	48	10	110	10	0	96	102	31	2.57	0.265	1.75
1B	CSbCSbC.....	Low	High	M-H	140	10	10	25	10	0	120	37	0	3.04	0.280	2.32
2A	Cont. corn.....	Low	High	Med.	180	10	30	25	40	50	390	470	590	2.98	0.280	2.07
2B	CCOS SbC.....	L-M	High	High	120	10	10	25	10	0	130	92	114	3.13	0.320	1.91
2C	CSbOMC.....	Low	Med.	Low	160	16	50	35	60	0	182	78	78	2.99	0.295	1.76
3A	CSbDC.....	Low	L-M	High	160	12	10	25	10	0	197	108	84	2.60	0.285	1.94
3B	CSbDCCC.....	Low	High	High	200	8	15	20	20	0	315	131	238	2.74	0.290	2.35
3C	Cont. corn.....	L-M	High	High	120	10	10	25	10	40	564	470	755	3.01	0.305	2.04
4 Up-A	CCOMMCC.....	VL-L	Med.	High	180	14	10	30	10	0	230	152	0	2.79	0.285	2.11
4 Up-B	SbCOMSbC.....	Low	High	High	160	8	10	20	10	0	187	31	12	2.75	0.285	2.07
4 Bot-A	CSbCSbC.....	Low	High	High	160	10	10	25	10	0	196	48	0	2.97	0.260	1.71
4 Bot-B	CSbCSbC.....	Low	High	High	160	10	10	25	10	0	186	92	30	2.77	0.260	1.97
5A	Cont. corn.....	Low	High	High	160	8	15	20	20	0	140	110	70	3.07	0.305	1.89
5B	MCSbC.....	Low	High	High	160	8	15	20	20	0	112	108	64	2.99	0.271	1.89
5C	Cont. corn.....	VL	High	Med.	220	8	35	20	40	0	217	31	52	3.14	0.295	1.55
6A	MCCSbC.....	Med.	High	High	120	10	10	25	10	0	85	45	20	2.71	0.247	1.62
6B	Cont. corn.....	Low	High	High	160	8	10	20	10	0	168	113	78	2.95	0.295	1.99
6C	SbCOSbC.....	Low	High	High	140	8	10	20	10	6	370	360	220	2.94	0.300	2.09
Kanawha	Cont. corn.....	VL	L-M	Low	200	36	65	80	80	0	200	120	120	2.76	0.300	1.53
Ankeny	Cont. corn.....	VL-L	High	High	200	10	10	20	10	0	230	95	75	2.69	0.258	1.68

C = corn; M = Meadow; D = diverted acres; O = Oats; Om = oats with meadow catch crop plowed under; Sb = soybeans; S = Sudan grass; VL = very low; L = low; M = medium; H = high; P = pasture; M-H = medium high; VL = very low to low; L-M = low-medium.
*$P \times 2.3 = P_2O_5$; $P_2O_5 \times 0.44 = P$; $K \times 1.2 = K_2O$; $K_2O \times 0.83 = K$.

**Fertilizer nutrients include: (1) commercial fertilizer and manure applied ahead of 1967 corn crop, (2) carryover credit where known and (3) legume credit.

Fertilizer and manure applied by each cooperator for the 1967 crop is shown in table D. Nutrients added from manure were included in the columns for N, P_2O_5 and K_2O. It was assumed that a ton of cattle or hog manure contributed approximately 5 pounds of N, 2 pounds of P (5 pounds P_2O_5) and 8 pounds of K (10 pounds K_2O). Credit was given for carryover nutrients where applicable.

To determine whether plants had received adequate fertility, leaf samples were obtained at silking time from all fields. To eliminate varietal differences in nutrient uptake, Minhybrid 417 and AES 704 were planted in northern and southern districts, respectively. For proper plant nutrition, the leaf sample should contain approximately 3 percent nitrogen, 0.3 percent phosphorus and 1.8 to 2 percent potassium. Leaf sampling results are presented in table D.

HOW INFORMATION IS PRESENTED

The index-of-entries table gives the name and number of each entry and the districts where tested. The performance of varieties at both moderate and high population levels is listed for all districts in tables 1 through 6. One-, 2 and 3-year yield averages are presented for each entry in each district. Varieties are ranked according to the 2-year moisture average. The remaining data show yearly district averages for stand, 1967 moisture percentages and 2- and 3-year district averages for root lodging, stalk lodging and dropped ears. Entries in the maturity trials (tables 7 and 8) are listed according to moisture percentage at first harvest. Information about the soil types on which the test fields were located is shown below each table of performance.

Climatic information also is shown below each table. Rainfall data for 1967 were collected by the cooperators on whose land the test fields were located. Other climatic data were obtained from the official Weather Bureau station nearest a particular yield test field. The relative amount of moisture in the soil during April is indicated as wet, medium or dry. The soil types of the test fields were considered to have a waterholding capacity of 9 to 12 inches in the top 5 feet of the soil profile. The soil was classified wet when it contained more than 8 inches of water; medium, when it contained between 5 and 8 inches of water; and dry, when it contained less than 5 inches of water. Rainfall for May through August is reported both as totals and as deviations from the normal for the month. Temperatures for May and June are reported both as averages and as deviations from the normal. The number of days in July and August with temperatures greater than 90° F. is shown and is considered an indicator of adverse high-temperature effects.

RESULTS FOR 1967

The 1967 average yield of all fields harvested was 112.1 bushels per acre (moderate and high-population average). Yields varied throughout the state. The best yields occurred in west central, central, east central, and southeastern Iowa.

Cooler-than-normal temperatures throughout most of the growing season, and especially in May, slowed the usual growth of the corn crop and probably caused some yield reductions. Frost the night of Sept. 28-29 over most of the north and west, and locally elsewhere, terminated the growing season of the later varieties that were still immature. Fields planted after May 10 (1A, 2B, 2C and 3B) showed the most frost damage.

Dry weather over much of the state in July and parts of August slowed nutrient uptake, especially phosphorus (see table D), and probably caused some yield reduction.

Other possible causes for lowered yields are:

1. No starter or pop-up fertilizer was used on Field 2C. However, liberal amounts were plowed under (table D).
2. Hail on July 16 damaged Field 3A. Early varieties appeared to be hurt more than late varieties.
3. Grassy weeds in fields 3C and 6A were more prevalent in the moderate population experimental area than on the high, possibly because of less shading. This may have placed the moderate population test at these two locations at an unfair disadvantage when compared with high population.
4. Western corn rootworms on fields 3B, 5C and, to some extent, on fields 5A and 6B caused some root lodging.

Average moisture content of the corn was 27.3 percent (high and moderate-population average), the highest since 1951.

Stand levels were about average, 86.5 percent (high and moderate-population average), and ear droppage was insignificant with only 0.1 percent on the moderate stands and 0.2 percent on high.

Fields 3C and 6C were not cultivated, but herbicides were applied.

HIGH STANDS vs. MODERATE STANDS

All varieties tested in the 1965, 1966 and 1967 Iowa corn yield tests and reported in the 2-year and 3-year averages in this bulletin were compared at both high and moderate plant populations. Fertility has generally been high in the fields where population level comparisons have been made (table D).

Tables 1 through 6 show the plant populations at which a variety may be better adapted for a given district. Table F shows the data for average yield, moisture, lodging and ear droppage for the 30 fields harvested in 1966 and 1967. The table indicates that, on the average, yield, moisture, lodging and ear droppage all slightly increased as stands increased from moderate to high plant populations.

In 1967, the moderate population averaged 110.7 bushels per acre compared with the high population average of 113.4 bushels per acre (see table E for comparisons in former years). This is the first year since 1963 that the high-population average has been greater than the moderate-population average. Of the 17 harvested fields in 1967, 7 fields yielded 1 bushel or more greater at high population than at low population; 6 yielded about the same at either population, and 4 fields yielded 1 bushel or more greater at low population than at high population.

The data in tables F and G and in tables 1 through 6 indicate that there are varieties better adapted at high populations than at moderate. Not all varieties, however, are capable of greater production when grown at high stands. Therefore, each variety should be carefully examined before deciding on a planting rate.

MEANING OF YIELD DIFFERENCES

Small differences in yield are usually of little importance. Variations occur because of stand, soil and other growing conditions that lower the accuracy of the results. Statistical analysis, however, makes it possible to determine, with known probabilities of error, whether a yield difference is real or whether it might have occurred by chance. LSD (least significant difference) is a term used to denote observed differences that are "statistically significant" at known probabilities. At the top of each table, you will find an LSD value for 1 in 20 chances of being in error.

Where the difference between any two randomly selected varieties listed in a district table is greater than the LSD value shown, you can be confident that, in 19 of 20 chances on the average, there is a real difference between two variety yield averages. If the observed difference in yield as shown in a table is less than the LSD value, the difference might still be real, but because of chance factors, the experiment may have produced no evidence of a real difference.

Table E. Yearly Summary, 1940 Through 1967, Average of All Fields Harvested.

Year	Average yield bu./A.	Average stand pct.	Average moisture pct.	Average lodging pct.*	Average dropped ears, pct.
1940	72.0	85.2	19.4	6.9	0.6
1941	68.3	87.2	20.7	34.9	1.0
1942	82.1	82.4	21.9	8.2	0.2
1943	83.1	78.9	24.7	9.1	0.2
1944	76.6	84.9	21.6	4.7	0.3
1945	71.8	86.8	24.9	28.3	0.8
1946	88.1	80.4	22.9	24.0	0.6
1947	55.1	80.6	18.3	27.9	1.0
1948	88.8	82.0	19.8	14.1	1.1
1949	77.3	84.5	17.2	34.5	8.6
1950	74.8	85.5	20.0	13.0	0.6
1951	70.6	87.4	27.7	21.1	0.4
1952	97.3	84.2	22.0	4.7	0.6
1953	95.9	80.8	15.8	13.1	3.3
1954	97.4	85.7	22.1	14.3	2.7
1955	85.7	87.6	18.1	23.6	2.7
1956	95.2	88.0	19.7	13.7	2.6
1957	102.9	86.5	24.3	10.2	1.3
1958	109.1	89.3	20.5	14.2	1.6
1959	109.1	91.1	23.8	22.3	0.7
1960	105.3	87.9	25.8	17.1	0.3
1961	113.2	90.8	21.9	17.4	0.8
1962	116.6	89.2	22.4	9.5	0.5
1963 (Moderate pop.)	116.0	88.5	19.6	12.4	0.9
1963 (High pop.)	116.2	85.5	19.8	16.0	1.0
1964 (Moderate pop.)	108.5	92.0	21.9	8.9	2.2
1964 (High pop.)	105.3	90.3	22.3	10.0	2.5
1965 (Moderate pop.)	98.3	91.4	25.3	24.3	1.2
1965 (High pop.)	94.8	90.0	25.9	32.8	1.6
1966 (Moderate pop.)	117.5	89.1	22.8	6.1	1.4
1966 (High pop.)	116.6	86.2	23.1	8.7	1.6
1967 (Moderate pop.)	110.7	87.7	26.8	3.3	0.1
1967 (High pop.)	113.4	85.3	27.7	3.7	0.2
Average	95.0	86.5	22.1	15.5	1.4

*Average root and stalk lodging.

Table F. Population Averages of 30 Test Fields for 1966-67.

	Moderate population (14,800 plants per acre at harvest)	High population (19,400 plants per acre at harvest)
Yield	113.5 bu./A.	114.1 bu./A.
Moisture	24.8%	25.4%
Total lodging	5.9%	7.3%
Ear droppage	0.4%	0.5%

INTERPRETATION OF RESULTS

The selection of corn varieties suited to your farming situation becomes more important each year. Qualities you may be looking for in a variety may differ from those desired by your neighbor.

Each variety tested was evaluated for yield in bushels per acre at 15.5-percent moisture content of the grain at harvest, percentage of root and stalk lodging and percentage of dropped ears. The average of these factors for all entries tested appears at the top of each table, 1 through 6. One suggestion for comparing and selecting varieties is to check the varieties having above-average yields and below-average root and stalk lodging and dropped ears. Also, compare your selected varieties in both the high- and moderate-population tables. Since entries are ranked by moisture content, select from the top half of the tables among varieties with above-average yields and below-average lodging and dropped ears.

Table G. District Yield Averages for 1966-67.

	Moderate population		High population	
District	Yield bu./A.	Approx. no. of plants at hvst.	Yield bu./A.	Approx. no. of plants at hvst.
1	105.6	15,200	101.9	20,200
2	106.9	15,800	108.2	20,400
3	113.5	14,800	117.6	19,600
4 Upland	110.6	13,800	108.9	18,200
4 Bottomland	110.0	13,700	111.7	18,000
5	126.5	14,200	128.8	18,400
6	120.9	14,400	121.6	18,800

Many farmers are interested in using several varieties of different maturities to spread the harvesting season. Varieties with a higher-than-average moisture content may fit this type of program. Early, midseason and late check varieties are shown in tables 1 through 6 and can be used to help evaluate relative maturity.

To evaluate relative maturity, the information obtained at Kanawha and Ankeny (tables 7 and 8) should be helpful. Three measures of maturity are presented. Silking date is the date in July when 50 percent of the plants had visible silks. Moisture content at 60 days after the average date of silking of the test field indicates the adaptability of the variety. This date approximates physiological maturity—meaning that the maximum amount of dry matter deposition in the kernels should have occurred by then. The third measure of maturity is moisture content when the test field was harvested, which was the average harvest date for the area. The relative rate of drying among varieties can be evaluated by comparing the moisture at approximate physiological maturity (60 days after average silking date) with the moisture at the average harvest date.

The harvesting method used is important in applying maturity data. Operators who harvest ear corn for storage in cribs may be more interested in the moisture content of corn at average harvest dates. Operators using wet-corn storage or corn combines and driers will probably be more interested in moisture content at 60 days after the average date of silking of the test fields at Ankeny or Kanawha.

Farmers may find it desirable to plant varieties that silk at different dates to spread the risk of extreme heat periods in July.

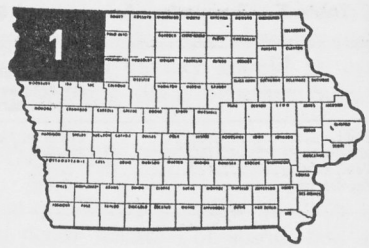
Most varieties tested in a given district in the Iowa Corn Yield Test are full-season types. This limits the opportunity you have in selecting superior early and midseason varieties. You may want to evaluate earlier varieties by looking at the tables for areas north of you.

Most farmers find it desirable to plant more than one variety. Any new varieties should be planted on a limited acreage for further evaluation before being planted on large acreages. When buying a variety, consider maturity, standability and quality of grain as well as yield.

TABLE 1 AVERAGE PERFORMANCE OF VARIETIES TESTED IN DISTRICT 1.*

(All varieties are double crosses unless marked otherwise.)**

MODERATE POPULATION—Approximately 17,300 kernels per acre at planting.



Bushels per acre necessary for a significant difference, assuming a 1 in 20 chance of being wrong. LSD values shown can be applied to any two randomly selected varieties.

	No. of hybrids	No. of tests	LSD
2-year average	24	4	8 bu.
3-year average	8	6	6 bu.

For additional information see text.

Brand and variety	Yield, bu./A. 1965	1966	1967	Av. 66-67	Av. 65-67	Moisture pct. 1967	Av. 66-67	Root lodging pct. Av. 66-67	Av. 65-67	Stalk lodging pct. Av. 66-67	Av. 65-67	Dropped ears pct. Av. 66-67	Av. 65-67	Stand pct. 1965	1966	1967
Average all entries	**88.3**	**113.1**	**101.9**	**107.5**	**100.3**	**33.2**	**30.0**	**6.3**	**5.1**	**2.7**	**6.5**	**.5**	**.7**	**90.8**	**93.7**	**90.8**
Iowa 4417 (ICIA) (early check)	**70**	**90**	**111**	**101**	**90**	**22.2**	**21.6**	**18**	**12**	**8**	**15**	**1**	**1**	**90**	**87**	**97**
Pioneer 3715 (3x)	87	108	108	108	101	27.2	25.1	2	2	3	7	1	1	91	96	85
Iowa 5480 (ICIA)	94	105	111	108	103	27.8	26.1	5	3	7	9	1	1	95	94	92
Burt's M-301 (3x)		113	99	106		31.8	27.3	2		5		0			97	93
Iowa 5676 (ICIA)		117	111	114		30.3	27.3	10		5		1			98	91
Northrup King PX52 (sx)		105	94	100		29.2	27.4	2		2		0			96	88
Minhybrid 417 (ICIA) (midseason check)	**96**	**113**	**110**	**112**	**107**	**31.9**	**28.4**	**9**	**6**	**3**	**5**	**0**	**0**	**97**	**95**	**96**
Iowa 5496 (ICIA)	96	111	103	107	103	32.8	28.6	8	5	3	5	0	1	93	93	94
Tomco Genetic Giant UC4400 (sx)		115	105	110		31.6	28.6	2		1		0			98	91
T-E Bonusmaker (sx)		107	99	103		31.8	28.9	7		2		0			92	88
Northrup King PX610 (3x)		128	101	115		32.8	29.7	2		1		1			93	92
Pioneer 3558 (sx)	96	118	108	113	107	32.8	29.9	4	2	3	7	0	0	93	89	92
N C+ 30SS (sx)		105	97	101		33.6	30.1	7		5		0			97	91
Corn King 513 (3x)		106	100	103		34.6	30.3	2		3		1			92	86
Northrup King PX63 (sx)		127	115	121		32.4	30.9	18		2		1			95	94
Pioneer 3567 (sx)		125	109	117		34.6	30.9	2		1		0			92	94
United-Hagie IXL6 (sx)		122	95	109		35.3	31.1	10		1		1			90	89
Pioneer 3566 (3x)		116	97	107		35.4	31.2	1		1		0			95	89
N C+ 55SC (3x)		118	104	111		34.8	32.0	6		2		1			95	93
Northrup King PX616 (3x)		126	92	109		36.6	33.1	8		2		1			92	90
Tomco Genetic Giant UC4600 (sx)		113	96	104		37.6	33.3	3		1		0			96	93
AES 704 (ICIA) (late check)	**81**	**102**	**79**	**90**	**87**	**37.6**	**34.1**	**9**	**7**	**1**	**2**	**1**	**2**	**93**	**93**	**84**
Pioneer 3291	87	106	96	101	96	41.2	36.9	6	4	1	2	0	0	95	92	91
Tomco Genetic Giant UC6000 (sx)		117	89	103		45.3	39.6	11		5		1			93	88

**sx = single cross; 3x = 3-way cross.

***Soil types on which test fields were located, along with temperature, rainfall and soil moisture information. See text for explanation.**

Soil type	April soil moist.	Rainfall (inches) May Amt. rec.	May Dep. from normal	June Amt. rec.	June Dep. from normal	July Amt. rec.	July Dep. from normal	August Amt. rec.	August Dep. from normal	Temperature May Av.	May Dep. from normal	June Av.	June Dep. from normal	Days max. above 90° Jl.	Days max. above 90° Aug.
FIELD 1A															
1965 Primgar s.c.l.	Med.	6.5	+2.7	3.1	−1.7	2.9	−0.4	1.2	−2.5	62.4	+3.5	68.1	−0.3	4	5
1966 Marcus s.c.l.	Med.	3.1	−0.7	0.9	−3.9	1.6	−1.7	2.3	−1.4	56.3	−2.6	68.7	+0.3	14	6
1967 Primgar s.c.l.	Dry	2.1	−1.7	8.4	+3.6	3.5	+0.2	5.1	+1.5	54.2	−4.7	66.7	−1.6	7	2
FIELD 1B															
1965 Marcus s.c.l.	Med.	4.5	+0.6	2.7	−2.3	1.6	−1.7	2.0	−1.7	61.9	+3.1	68.5	−0.2	5	5
1966 Primgar s.c.l.	Wet	2.7	−1.2	2.2	−2.8	4.6	+1.3	2.8	−0.9	54.8	−4.0	68.5	−0.2	12	1
1967 Primgar s.c.l.	Med.	3.1	−0.8	6.6	+1.6	0.3	−3.0	2.1	−1.5	53.1	−5.7	67.4	−1.3	5	0

s.c.l. = silty clay loam

TABLE 1 (Continued)

HIGH POPULATION—Approximately 23,400 kernels per acre at planting.

	No. of hybrids	No. of tests	LSD
2-year average	24	4	8 bu.
3-year average	8	6	6 bu.

For additional information see text.

Brand and variety	Yield, bu./A. 1965	1966	1967	Av. 66-67	Av. 65-67	Moisture pct. 1967	Av. 66-67	Root lodging pct. Av. 66-67	Av. 65-67	Stalk lodging pct. Av. 66-67	Av. 65-67	Dropped ears pct. Av. 66-67	Av. 65-67	Stand pct. 1965	1966	1967
Average all entries	**82.7**	**112.4**	**95.0**	**103.6**	**96.6**	**35.5**	**31.5**	**10.3**	**7.0**	**4.9**	**9.9**	**.4**	**.6**	**90.7**	**92.8**	**89.8**
Iowa 4417 (ICIA) (early check)	**77**	**79**	**97**	**88**	**84**	**24.3**	**23.1**	**11**	**8**	**14**	**18**	**1**	**1**	**92**	**92**	**93**
Pioneer 3715 (3x)	85	113	105	109	101	30.1	26.6	6	4	7	13	0	1	93	93	88
Burt's M-301 (3x)		119	104	111		30.1	27.1	2		6		0			95	92
Iowa 5480 (ICIA)	87	112	99	105	99	32.1	28.1	9	6	6	10	0	0	93	92	85
Iowa 5676 (ICIA)		103	92	97		32.3	28.6	15		9		1			96	90
Minhybrid 417 (ICIA) (midseason check)	**81**	**108**	**107**	**107**	**98**	**32.9**	**29.4**	**16**	**11**	**5**	**9**	**0**	**1**	**93**	**92**	**94**
Northrup King PX52 (sx)		99	91	95		33.3	30.1	4		2		0			94	92
Pioneer 3558 (sx)	96	119	107	113	107	34.4	30.3	7	5	8	12	0	0	85	91	89
Iowa 5496 (ICIA)	80	115	94	104	96	36.3	30.6	15	10	6	9	0	1	93	96	91
Tomco Genetic Giant UC4400 (sx)		113	98	105		34.4	30.8	6		2		1			94	95
N C+ 30SS (sx)		104	90	97		34.5	31.1	15		4		0			95	91
Pioneer 3566 (3x)		130	98	114		35.6	31.4	4		4		0			92	86
T-E Bonusmaker (sx)		106	88	97		35.6	31.5	4		3		0			93	92
Northrup King PX610 (3x)		135	86	111		35.0	31.6	10		4		0			98	87
Corn King 513 (3x)		106	90	98		36.3	31.7	6		4		1			91	85
Pioneer 3567 (sx)		130	109	119		36.2	31.8	4		2		0			89	89
Northrup King PX63 (sx)		115	109	112		34.9	32.9	33		6		0			93	93
N C+ 55SC (3x)		113	93	103		37.0	33.3	14		4		2			91	90
United-Hagie IXL6 (sx)		114	87	101		38.2	33.3	17		2		1			89	92
Northrup King PX616 (3x)		128	90	109		39.7	34.5	8		4		1			93	84
Tomco Genetic Giant UC4600 (sx)		101	90	95		40.0	35.0	6		5		1			92	91
AES 704 (ICIA) (late check)	**74**	**108**	**69**	**88**	**84**	**40.4**	**35.9**	**16**	**11**	**2**	**4**	**0**	**1**	**94**	**91**	**85**
Pioneer 3291	80	117	87	102	94	45.3	39.1	6	4	3	6	0	0	90	89	90
Tomco Genetic Giant UC6000 (sx)		112	78	95		47.6	40.9	17		8		1			91	89

**sx = single cross; 3x = 3-way cross.

Average performance of varieties tested in 1965, 1966 and 1967.

Population level	Yield bu./acre	Stand pct.	Moist. pct.	Lodging pct. Root	Lodging pct. Stalk	Dropped ears pct.
FIELD 1A						
1965 Moderate population	88.0	94.6	23.2	0.5	4.4	1.3
1965 High population	82.3	94.1	24.8	0.9	7.3	2.0
1966 Moderate population	99.1	95.8	26.1	21.0	6.3	0.8
1966 High population	92.7	95.2	27.2	26.0	8.1	0.6
1967 Moderate population	99.2	94.2	34.1	3.5	0.5	0.0
1967 High population	92.3	94.3	36.4	3.8	1.1	0.1
FIELD 1B						
1965 Moderate population	83.3	88.6	32.9	1.4	15.7	1.6
1965 High population	77.8	85.5	33.3	1.8	21.3	2.2
1966 Moderate population	118.2	90.1	28.6	6.1	2.6	0.9
1966 High population	124.7	88.1	29.2	12.0	5.2	0.7
1967 Moderate population	105.7	87.0	30.9	0.1	2.2	0.2
1967 High population	97.8	84.0	33.7	0.0	4.0	0.2

TABLE 2. AVERAGE PERFORMANCE OF VARIETIES TESTED IN DISTRICT 2.*

(All varieties are double crosses unless marked otherwise.)**

MODERATE POPULATION—Approximately 17,300 kernels per acre at planting.

Bushels per acre necessary for a significant difference, assuming a 1 in 20 chance of being wrong. LSD values shown can be applied to any two randomly selected varieties.

	No. of varieties	No. of tests	LSD
2-year average	21	6	7 bu.
3-year average	8	9	6 bu.

For additional information see text.

Brand and variety	Yield, bu./A.					Moisture pct.		Root lodging pct.		Stalk lodging pct.		Dropped ears pct.		Stand pct.		
	1965	1966	1967	Av. 66-67	Av. 65-67	1967	Av. 66-67	Av. 66-67	Av. 65-67	Av. 66-67	Av. 65-67	Av. 66-67	Av. 65-67	1965	1966	1967
Average all entries	**89.4**	**124.5**	**94.3**	**109.4**	**100.9**	**27.5**	**25.7**	**6.3**	**4.1**	**4.6**	**9.5**	**.8**	**.4**	**92.3**	**93.1**	**90.1**
Iowa 4417 (ICIA) (early check)	**96**	**99**	**91**	**95**	**95**	**21.5**	**20.6**	**6**	**4**	**13**	**20**	**1**	**1**	**88**	**92**	**93**
Iowa 5563 (ICIA)		125	105	115		21.8	21.1	5		6		1			93	93
Cornelius C35	88	109	96	103	98	23.6	22.1	3	2	5	7	1	1	92	88	87
Pioneer 3773 (sx)		129	113	121		24.2	22.8	3		4		1			90	89
Iowa 5664 (ICIA)		131	98	114		23.5	23.6	5		6		0			96	97
Pioneer 3715 (3x)	100	129	104	117	111	26.1	24.0	3	2	3	6	0	0	90	94	88
Pioneer 3620	90	113	91	102	98	27.6	24.7	3	3	10	14	1	1	94	95	90
Minhybrid 417 (ICIA) (midseason check)	**86**	**126**	**101**	**113**	**104**	**26.2**	**24.9**	**6**	**4**	**6**	**11**	**0**	**0**	**93**	**97**	**95**
Northrup King PX52 (sx)		124	95	110		27.1	25.3	9		2		0			95	92
Tomco Genetic Giant 440		121	83	102		27.0	25.3	6		7		1			93	90
Cornelius C40SX (sx)	91	130	105	117	109	28.3	25.9	9	6	1	6	0	0	96	97	90
Tomco Genetic Giant UC4400 (sx)		128	98	113		28.7	26.0	9		3		0			95	93
Cornelius C48		115	101	108		27.2	26.3	3		5		1			92	91
T-E Bonusmaker (sx)		126	99	112		28.5	26.4	13		1		0			97	94
United-Hagie IXL6 (sx)		131	87	109		28.9	26.4	8		2		4			93	82
Pioneer 3558 (sx)	86	137	94	116	106	29.3	27.2	11	8	3	7	1	0	92	92	89
Northrup King PX610 (3x)		139	91	115		27.9	27.3	9		5		2			94	87
Tomco Genetic Giant UC4600 (sx)		127	87	107		31.9	29.6	9		4		0			92	89
Pioneer 3567 (sx)		138	90	114		32.7	30.0	4		2		0			93	93
Northrup King PX616 (3x)		122	86	104		31.7	30.1	4		7		2			93	86
AES 704 (ICIA) (late check)	**79**	**115**	**67**	**91**	**87**	**33.2**	**30.7**	**6**	**4**	**4**	**5**	**1**	**1**	**94**	**87**	**86**

**sx = single cross; 3x = 3-way cross.

Soil types on which test fields were located, along with temperature, rainfall and soil moisture information. See text for explanation.

Soil type	April soil moist.	Rainfall (inches) May Amt. rec.	May Dep. from normal	June Amt. rec.	June Dep. from normal	July Amt. rec.	July Dep. from normal	August Amt. rec.	August Dep. from normal	Temperature May Av.	May Dep. from normal	June Av.	June Dep. from normal	Days max. above 90° Jl.	Days max. above 90° Aug.
FIELD 2A															
1965 Nicollet l	Wet	7.2	+3.3	3.4	—1.7	1.0	—2.3	1.9	—2.0	62.1	+2.9	68.2	—0.8	3	6
1966 Nicollet l	Wet	2.4	—1.5	3.8	—1.3	2.7	—0.5	3.7	—0.3	55.5	—3.7	69.0	0.0	16	4
1967 Nicollet l	Wet	1.9	—2.1	4.2	—0.9	1.4	—1.8	2.2	—1.7	53.1	—6.1	66.6	—2.4	8	0
FIELD 2B															
1965 Kenyon l	Wet	0.7	—3.3	1.8	—3.0	4.9	+1.4	2.1	—1.9	61.4	+2.8	67.2	—0.9	2	5
1966 Kenyon l	Wet	1.1	—2.9	6.1	+1.4	6.9	+3.4	2.5	—1.6	54.5	—4.1	68.1	0.0	7	1
1967 Floyd l	Wet	2.4	—1.6	7.8	+3.0	3.0	—0.5	4.3	+0.3	53.8	—4.8	67.1	—1.0	0	0
FIELD 2C															
1965 Fayette s.l	Med.	5.0	+1.1	3.6	—1.3	3.0	—0.7	4.1	+0.2	61.3	+2.5	66.5	—1.9	2	5
1966 Fayette s.l	Wet	2.7	—1.3	3.5	—1.4	5.7	+2.0	1.0	—2.9	53.7	—5.1	68.0	—0.4	5	1
1967 Fayette s.l	Med.	2.5	—1.5	5.3	+0.4	0.5	—3.2	1.8	—2.1	54.7	—4.4	68.4	—0.3	1	0

l = loam s = silt(y)

TABLE 2 (continued)

HIGH POPULATION—Approximately 23,400 kernels per acre at planting.

	No. of varieties	No. of tests	LSD
2-year average	21	6	8 bu.
3-year average	8	9	6 bu.

For additional information see text.

Brand and variety	Yield, bu./A. 1965	1966	1967	Av. 66-67	Av. 65-67	Moisture pct. 1967	Av. 66-67	Root lodging pct. Av. 66-67	Av. 65-67	Stalk lodging pct. Av. 66-67	Av. 65-67	Dropped ears pct. Av. 66-67	Av. 65-67	Stand pct. 1965	1966	1967
Average all entries	**82.9**	**124.7**	**95.2**	**110.0**	**99.6**	**28.6**	**26.4**	**9.7**	**7.1**	**6.1**	**14.4**	**.8**	**.8**	**91.4**	**90.1**	**86.6**
Iowa 4417 (ICIA) (early check)	**77**	**102**	**98**	**100**	**92**	**23.6**	**21.9**	**13**	**9**	**12**	**24**	**1**	**1**	**90**	**90**	**91**
Iowa 5563 (ICIA)		123	107	115		23.4	22.1	7		7		0			88	90
Cornelius C35	87	115	100	108	101	24.5	23.0	5	3	7	13	1	1	91	90	84
Pioneer 3773 (sx)		118	107	113		25.9	23.5	11		5		1			89	82
Pioneer 3715 (3x)	95	124	100	112	106	26.0	24.5	3	2	4	14	1	1	91	92	86
Iowa 5664 (ICIA)		126	97	112		25.1	24.9	7		7		1			92	93
Pioneer 3620	85	117	89	103	97	27.4	24.9	10	7	10	16	1	1	92	89	83
Minhybrid 417 (ICIA) (midseason check)	**87**	**122**	**93**	**108**	**101**	**27.9**	**25.5**	**9**	**6**	**7**	**17**	**1**	**1**	**92**	**92**	**90**
Cornelius C48		121	98	110		26.9	25.8	3		7		1			90	87
Pioneer 3558 (sx)	79	137	99	118	107	28.7	26.3	13	10	5	10	2	1	91	86	86
Tomco Genetic Giant 440		122	90	106		27.5	26.4	5		8		0			92	80
Northrup King PX52 (sx)		124	99	112		28.7	26.6	13		3		1			92	91
Cornelius C40SX (sx)	83	121	103	112	103	29.2	26.8	17	11	5	13	0	0	92	94	87
Northrup King PX610 (3x)		145	90	118		28.9	27.5	2		9		1			93	86
T-E Bonusmaker (sx)		124	92	108		31.1	27.6	15		3		0			93	87
Tomco Genetic Giant UC4400 (sx)		128	92	110		31.7	28.1	15		4		0			90	90
United-Hagie IXL6 (sx)		118	96	107		32.0	28.4	19		3		2			90	86
Tomco Genetic Giant UC4600 (sx)		132	94	113		31.8	29.4	11		4		1			92	84
Pioneer 3567 (sx)		136	97	116		33.5	29.8	6		6		1			83	90
Northrup King PX616 (3x)		138	80	109		33.5	30.7	8		9		2			89	90
AES 704 (ICIA) (late check)	**70**	**125**	**78**	**102**	**91**	**32.8**	**31.3**	**13**	**9**	**3**	**8**	**0**	**0**	**92**	**86**	**83**

**sx = single cross; 3x = 3-way cross.

Average performance of varieties tested in 1965, 1966, 1967.

Population level	Yield bu./acre	Stand pct.	Moist. pct.	Lodging pct. Root	Lodging pct. Stalk	Dropped ears pct.
FIELD 2A						
1965 Moderate population	78.0	98.8	40.6	0.0	3.5	0.9
1965 High population	71.3	96.6	42.3	0.0	4.0	0.9
1966 Moderate population	118.0	92.2	25.8	14.4	5.9	0.9
1966 High population	123.1	85.0	26.0	12.8	8.6	0.9
1967 Moderate population	105.8	93.6	27.2	0.2	1.8	0.1
1967 High population	106.4	89.9	27.5	0.1	3.3	0.2
FIELD 2B						
1965 Moderate population	90.5	96.2	29.7	0.9	48.4	0.1
1965 High population	86.5	93.4	31.4	0.6	67.7	0.1
1966 Moderate population	111.8	92.5	23.0	25.1	13.5	2.1
1966 High population	108.6	90.1	24.2	40.9	16.1	1.9
1967 Moderate population	100.8	90.9	27.5	1.0	1.8	0.1
1967 High population	109.6	90.3	28.6	3.8	2.4	0.0
FIELD 2C						
1965 Moderate population	77.6	79.7	28.7	3.8	21.6	0.1
1965 High population	78.0	78.8	30.3	4.4	34.5	0.1
1966 Moderate population	124.4	91.2	23.6	0.0	4.5	0.6
1966 High population	127.7	89.7	23.5	0.1	6.7	0.5
1967 Moderate population	80.2	85.1	28.0	0.0	2.0	0.2
1967 High population	73.8	78.7	29.6	0.2	2.6	0.7

TABLE 3. AVERAGE PERFORMANCE OF VARIETIES TESTED IN DISTRICT 3.*

(All varieties are double crosses unless marked otherwise.)**

MODERATE POPULATION—Approximately 17,300 kernels per acre at planting.

Bushels per acre necessary for a significant difference, assuming a 1 in 20 chance of being wrong. LSD values shown can be applied to any two randomly selected varieties.

	No. of hybrids	No. of tests	LSD
2-year average	23	6	8 bu.
3-year average	10	9	6 bu.

For additional information see text.

Brand and variety	Yield, bu./A.					Moisture pct.		Root lodging pct.		Stalk lodging pct.		Dropped ears pct.		Stand pct.		
	1965	1966	1967	Av. 66-67	Av. 65-67	1967	Av. 66-67	Av. 66-67	Av. 65-67	Av. 66-67	Av. 65-67	Av. 66-67	Av. 65-67	1965	1966	1967
Average all entries	**99.9**	**128.5**	**101.1**	**114.7**	**109.5**	**25.9**	**24.5**	**4.6**	**2.9**	**3.3**	**8.7**	**.7**	**.4**	**94.4**	**92.6**	**87.8**
Iowa 4417 (ICIA) (early check)	**90**	**109**	**95**	**102**	**98**	**20.2**	**19.8**	**3**	**2**	**12**	**21**	**1**	**1**	**94**	**91**	**93**
Pioneer 3715 (3x)	99	123	96	109	106	21.0	20.8	5	3	3	8	0	1	97	93	81
Minhybrid 417 (ICIA) (midseason check)	**100**	**129**	**111**	**120**	**114**	**22.5**	**21.9**	**3**	**2**	**6**	**13**	**0**	**0**	**97**	**98**	**93**
Pioneer 3558 (sx)	101	126	106	116	111	22.3	21.9	8	5	3	9	0	0	94	94	88
Cornelius C60 SX (sx)		124	100	112		21.9	22.3	9		9		2			93	88
Northrup King PX52 (sx)		119	90	105		23.5	22.8	4		4		1			98	88
United-Hagie 1XL6 (sx)		127	100	114		25.1	22.9	2		2		1			88	88
Northrup King PX610 (3x)		137	95	116		23.7	23.0	2		2		1			95	83
T-E Bonusmaker (sx)		124	104	114		24.7	23.0	5		2		1			97	89
Pioneer 3566 (3x)		125	99	112		24.9	23.3	3		2		0			90	84
T-E Harvestmaster		109	104	107		24.8	23.6	8		4		1			91	88
McAllister TX303 (3x)	94	131	108	119	111	23.3	23.7	3	2	3	8	1	1	91	94	88
Pioneer 3567 (sx)		135	104	119		25.4	24.1	6		3		0			94	90
Tomco Genetic Giant UC4600 (sx)		134	100	117		25.3	24.1	3		4		1			92	86
Iowa 5654 (ICIA)	100	129	95	112	108	25.6	24.3	4	2	3	4	1	1	92	93	85
Middlekoop M301 (sx)		137	105	121		26.4	24.4	2		4		1			93	88
Northrup King PX616 (3x)		135	95	115		27.7	25.7	6		1		1			90	87
Middlekoop M43 (3x)	108	132	96	114	112	28.8	26.4	3	2	3	7	1	1	97	93	87
AES 704 (ICIA) (late check)	**96**	**129**	**93**	**111**	**106**	**28.2**	**26.6**	**5**	**3**	**2**	**5**	**0**	**0**	**94**	**92**	**91**
Middlekoop M35 (sx)	103	124	112	118	113	28.6	26.9	7	5	3	7	0	0	97	83	90
Pioneer 3510 (sx)	108	137	108	122	118	34.0	30.4	4	3	2	7	1	1	94	96	91
Tomco Genetic Giant UC6000 (sx)		135	99	117		33.2	30.4	10		2		1			90	84
Tomco Genetic Giant UC8300 (sx)		142	106	124		34.1	31.3	6		2		1			90	91

**sx = single cross; 3x = 3-way cross.

*Soil types on which test fields were located, along with temperature, rainfall and soil moisture information. See text for explanation.

Soil type	April soil moist.	Rainfall (inches) May Amt. rec.	May Dep. from normal	June Amt. rec.	June Dep. from normal	July Amt. rec.	July Dep. from normal	August Amt. rec.	August Dep. from normal	Temperature May Av.	May Dep. from normal	June Av.	June Dep. from normal	Days max. above 90° Jl.	Days max. above 90° Aug.
FIELD 3A															
1965 Webster s.c.l	Med.	4.6	+0.5	4.0	−1.0	1.2	−2.4	3.1	−0.4	64.6	+4.5	69.8	+0.2	4	6
1966 Nicollet l	Med.	1.7	−2.4	3.7	−1.3	3.4	−0.1	3.2	−0.3	57.1	−3.0	69.8	+0.2	12	2
1967 Nicollet l	Med.	3.5	−0.5	11.5	+6.5	1.5	−2.1	1.4	−2.1	55.9	−4.2	68.1	−1.5	2	0
FIELD 3B															
1965 Nicollet l	Wet	5.3	+1.0	1.5	−3.3	3.8	+0.3	6.1	+2.3	63.0	+3.4	67.5	−1.7	5	4
1966 Nicollet l	Wet	3.8	−0.5	8.3	+3.4	5.6	+2.1	3.7	−0.2	55.1	−4.5	69.0	−0.2	11	1
1967 Nicollet l	Med.	2.7	−1.6	12.7	+7.8	0.8	−2.7	3.7	−0.1	55.5	−4.1	68.3	−0.9	2	0
FIELD 3C															
1965 Floyd l	Med.	4.1	+0.2	4.6	−0.3	3.8	+0.4	6.3	+2.7	61.9	+2.5	67.2	−1.9	2	6
1966 Floyd l	Wet	6.8	+2.9	7.4	+2.2	3.7	+0.3	3.9	+0.3	54.2	−5.2	68.5	−0.6	8	0
1967 Floyd l	Med.	2.1	−1.8	6.2	+1.0	1.2	−2.8	4.3	+0.1	54.5	−4.9	68.3	−0.8	2	0

s = silt(y) c = clay l = loam

TABLE 3 (continued)

HIGH POPULATION—Approximately 23,400 kernels per acre at planting.

	No. of hybrids	No. of tests	LSD
2-year average	29	6	9 bu.
3-year average	22	9	6 bu.

For additional information see text.

Brand and variety	Yield, bu./A. 1965	1966	1967	Av. 66-67	Av. 65-67	Moisture pct. 1967	Av. 66-67	Root lodging pct. Av. 66-67	Av. 65-67	Stalk lodging pct. Av. 66-67	Av. 65-67	Dropped ears pct. Av. 66-67	Av. 65-67	Stand pct. 1965	1966	1967
Average all entries	**99.7**	**127.4**	**110.8**	**119.1**	**111.7**	**26.6**	**24.6**	**4.7**	**3.3**	**5.8**	**16.7**	**1.0**	**.8**	**90.3**	**91.1**	**87.2**
Iowa 4417 (ICIA) (early check)	**82**	**96**	**89**	**93**	**89**	**20.8**	**19.9**	4	**3**	**13**	**22**	**1**	**1**	**92**	**84**	**78**
Pioneer 3558 (sx)	105	137	120	128	120	21.3	20.5	10	7	6	10	0	0	88	91	90
Minhybrid 417 (ICIA) (midseason check)	**100**	**119**	**117**	**118**	**112**	**22.8**	**21.8**	3	**2**	**9**	**17**	**0**	**1**	**94**	**91**	**89**
Pioneer 3715 (3x)	100	115	115	115	110	23.3	22.0	3	2	4	9	1	1	92	93	89
Northrup King PX610 (3x)		132	121	126		23.9	22.8	3		5		1			91	87
Northrup King PX52 (sx)		121	104	112		24.3	22.9	1		4		1			93	92
T-E Bonusmaker (sx)		129	107	118		25.3	23.4	8		2		0			95	89
Cornelius C60 SX (sx)		127	114	120		25.4	23.7	3		12		3			91	89
Pioneer 3566 (3x)		132	115	124		25.7	23.8	5		3		1			89	85
Pioneer 3567 (sx)		142	112	127		25.5	24.1	4		3		0			89	87
Iowa 5654 (ICIA)	96	121	99	110	105	25.7	24.3	5	4	4	55	1	1	85	91	83
McAllister TX303 (3x)	100	136	117	126	118	24.7	24.4	7	5	6	11	1	1	92	92	89
Middlekoop M301 (sx)		129	112	120		27.1	24.6	4		10		1			94	87
Northrup King PX616 (3x)		129	112	120		26.6	24.7	3		6		2			87	83
T-E Harvestmaster		118	105	111		26.4	24.7	6		6		1			94	87
Tomco Genetic Giant UC4600 (sx)		130	121	125		26.2	24.7	2		4		0			92	91
United-Hagie IXL6 (sx)		126	108	117		27.8	24.8	6		2		1			85	87
AES 704 (ICIA) (late check)	**94**	**119**	**97**	**108**	**103**	**27.0**	**25.8**	4	**3**	**3**	**6**	**2**	**1**	**92**	**91**	**90**
Middlekoop M43 (3x)	106	130	107	118	114	29.7	26.3	5	4	7	12	1	1	89	95	87
Middlekoop M35 (sx)	101	140	121	130	120	30.8	27.6	5	4	6	14	0	0	87	92	88
Pioneer 3510 (sx)	114	151	111	131	125	33.5	28.9	3	2	5	12	1	1	93	99	90
Tomco Genetic Giant UC6000 (sx)		115	111	113		33.9	30.4	7		7		3			88	85
Tomco Genetic Giant UC8300 (sx)		131	111	121		33.8	30.8	11		8		2			92	82

**sx = single cross; 3x = 3-way cross.

Average performance of varieties tested in 1965, 1966 and 1967.

Population level	Yield bu./acre	Stand pct.	Moist. pct.	Lodging pct. Root	Lodging pct. Stalk	Dropped ears pct.
FIELD 3A						
1965 Moderate population	82.2	90.3	21.6	0.3	5.4	1.5
1965 High population	82.2	89.2	21.7	0.2	6.2	2.5
1966 Moderate population	119.5	90.4	23.0	2.7	2.9	2.3
1966 High population	108.7	84.6	22.8	2.8	6.4	3.0
1967 Moderate population	96.0	85.2	24.9	0.1	7.7	0.0
1967 High population	100.8	82.7	24.6	0.5	9.3	0.1
FIELD 3B						
1965 Moderate population	98.0	99.1	25.5	0.6	36.4	0.1
1965 High population	92.2	96.7	25.4	0.2	50.5	0.2
1966 Moderate population	118.5	93.7	24.9	0.1	2.0	1.6
1966 High population	116.9	92.9	24.6	0.2	3.2	2.5
1967 Moderate population	96.1	86.3	28.5	20.6	0.8	0.0
1967 High population	96.9	83.8	29.7	22.6	2.3	0.0
FIELD 3C						
1965 Moderate population	107.5	92.2	23.6	0.1	8.3	0.1
1965 High population	106.9	89.0	23.5	0.2	16.9	0.2
1966 Moderate population	140.5	93.0	22.3	0.1	1.9	0.5
1966 High population	147.0	90.9	21.7	0.2	5.2	0.8
1967 Moderate population	109.9	90.5	24.0	0.0	3.3	0.1
1967 High population	135.3	92.6	24.8	0.0	5.3	0.1

TABLE 4U. AVERAGE PERFORMANCE OF VARIETIES TESTED IN DISTRICT 4 UPLAND.*

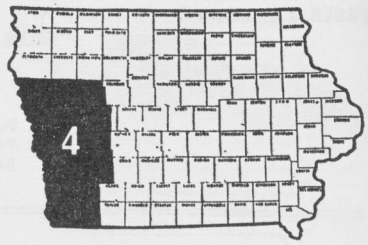
(All varieties are double crosses unless marked otherwise.)**

MODERATE POPULATION—Approximately 16,000 kernels per acre at planting.

Bushels per acre necessary for a significant difference, assuming a 1 in 20 chance of being wrong. LSD values shown can be applied to any two randomly selected varieties.

	No. of hybrids	No. of tests	LSD
2-year average	23	2	11 bu.
3-year average	9	4	7 bu.

For additional information see text.



Two upland test fields in district 4. See fig. 1.

Brand and variety	Yield, bu./A. 1965	1966	1967	Av. 66-67	Av. 65-67	Moisture pct. 1967	Av. 66-67	Root lodging pct. Av. 66-67	Av. 65-67	Stalk lodging pct. Av. 66-67	Av. 65-67	Dropped ears pct. Av. 66-67	Av. 65-67	Stand pct. 1965	1966	1967
Average all entries	**108.0**	**108.0**	**117.0**	**113.1**	**110.9**	**34.1**	**28.1**	**2.5**	**4.7**	**2.9**	**8.1**	**1.3**	**1.1**	**89.8**	**86.7**	**91.4**
Iowa 4417 (ICIA) (early check)	**86**	**73**	**120**	**97**	**93**	**21.3**	**19.2**	**2**	**4**	**17**	**16**	**2**	**2**	**90**	**88**	**94**
Northrup King PX52 (sx)		94	111	103		30.5	24.4	1		3		2			93	93
T-E Harvestmaster		90	115	103		30.5	25.1	1		4		1			81	89
Northrup King PX610 (sx)		116	118	117		31.2	25.4	2		4		2			88	87
Northrup King PX63 (sx)		121	127	124		31.5	25.8	6		2		1			93	89
Iowa 5772 (ICIA)		102	116	109		32.7	26.3	6		4		1			88	95
Northrup King PX616 (3x)	112	119	120	120	117	32.3	26.6	1	2	4	10	3	3	90	88	88
AES 704 (ICIA) (midseason check)	**110**	**104**	**117**	**111**	**110**	**33.4**	**26.8**	**0**	**1**	3	3	**1**	**1**	**92**	**78**	**93**
Northrup King KT623A	98	112	122	117	111	32.6	26.9	2	5	7	14	1	2	90	91	91
Iowa 5793 (ICIA)		105	114	109		34.9	27.6	5		1		0			86	96
Northrup King KT657		101	123	112		33.7	27.7	3		7		4			93	93
Iowa 5797 (ICIA)		118	106	112		34.4	27.9	1		1		0			89	85
Pioneer 3291	110	114	123	119	116	34.5	28.2	0	3	1	5	0	0	91	89	95
Stewart S-74		95	117	106		34.1	28.4	4		5		3			80	90
Tomco Genetic Giant 619		122	112	117		35.7	28.6	1		1		1			86	90
Pioneer 3510 (sx)	124	133	127	130	128	36.2	28.9	0	1	1	5	0	0	90	92	96
Tomco Genetic Giant UC8300 (sx)		121	129	125		35.7	29.8	0		4		1			85	90
Pioneer 3302		120	116	118		36.3	30.6	1		1		1			89	96
Tomco Genetic Giant 838		112	123	118		35.8	30.6	1		3		2			87	86
AES 801 (ICIA) (late check)	**97**	**107**	**115**	**111**	**106**	**36.4**	**30.8**	**3**	**6**	**3**	**9**	**3**	**3**	**89**	**83**	**93**
Pioneer 321	116	112	112	112	113	38.5	31.8	8	13	1	7	1	1	90	93	91
Pioneer 3306 (sx)	115	104	111	107	110	39.1	32.6	7	8	3	9	0	0	87	77	96
Pioneer 3307 (3x)		91	98	95		42.3	35.3	2		2		1			78	87

**sx = single cross; 3x = 3-way cross.

Soil types on which test fields were located, along with temperature, rainfall and soil moisture information. See text for explanation.

Soil type	April soil moist.	Rainfall (inches) May Amt. rec.	May Dep. from normal	June Amt. rec.	June Dep. from normal	July Amt. rec.	July Dep. from normal	August Amt. rec.	August Dep. from normal	Temperature May Av.	May Dep. from normal	June Av.	June Dep. from normal	Days max. above 90° Jl.	Aug
FIELD 4 UPLAND A															
1965 Marshall s.l. Not harvested in 1966 or 1967	Wet	4.0	+0.3	6.3	+1.5	4.1	+0.6	1.7	—2.9	65.4	+4.4	69.4	—1.4	5	7
FIELD 4 UPLAND B															
1965 Marshall s.l.	Wet	5.9	+2.1	3.0	—2.1	4.3	+1.0	1.2	—2.3	64.2	+3.6	68.7	—1.5	4	10
1966 Marshall s.l.	Med.	3.7	—0.1	4.1	—1.0	1.2	—2.3	1.6	—1.9	57.3	—3.3	68.9	—1.3	10	1
1967 Marshall s.l.	Dry	2.0	—1.7	12.0	+6.9	1.9	—1.4	2.8	—0.7	56.8	—3.8	69.0	—1.2	8	2

s.l. = silt loam

TABLE 4U (continued)

HIGH POPULATION—Approximately 21,000 kernels per acre at planting.

	No. of hybrids	No. of tests	LSD
2-year average	23	2	12 bu.
3-year average	9	4	8 bu.

For additional information see text.

Brand and variety	Yield, bu./A.					Moisture pct.		Root lodging pct.		Stalk lodging pct.		Dropped ears pct.		Stand pct.		
	1965	1966	1967	Av. 66-67	Av. 65-67	1967	Av. 66-67	Av. 66-67	Av. 65-67	Av. 66-67	Av. 65-67	Av. 66-67	Av. 65-67	1965	1966	1967
Average all entries	**102.5**	**106.4**	**114.7**	**111.1**	**106.5**	**35.4**	**29.0**	**6.1**	**8.9**	**6.1**	**15.0**	**1.5**	**1.8**	**89.5**	**85.2**	**88.1**
Iowa 4417 (ICIA) (early check)	**86**	**68**	**115**	**91**	**89**	**22.8**	**20.1**	2	4	**15**	**17**	2	2	87	**90**	**90**
Northrup King PX52 (sx)		91	106	98		30.1	24.8	0		5		0			91	82
Northrup King PX610 (3x)		126	117	121		31.7	25.8	9		5		1			89	89
Northrup King PX63 (sx)		120	132	126		32.0	26.3	10		6		0			85	88
Iowa 5772 (ICIA)		112	113	113		33.2	26.6	10		4		1			87	88
T-E Harvestmaster		90	117	103		33.5	26.6	1		6		1			77	91
Northrup King PX616 (3x)	99	117	133	125	116	33.4	27.3	6	5	8	18	2	3	89	86	90
Northrup King KT623A	88	95	115	105	99	33.9	27.6	4	7	12	22	3	3	94	87	91
AES 704 (ICIA) (midseason check)	**106**	**93**	**108**	**100**	**102**	**35.0**	**27.8**	8	**7**	**6**	8	**4**	**3**	**89**	**77**	**85**
Iowa 5793 (ICIA)		102	107	104		35.3	28.1	11		2		1			77	93
Pioneer 3510 (sx)	121	127	139	133	129	35.6	28.6	2	4	4	14	1	1	89	84	89
Iowa 5797 (ICIA)		118	107	112		35.5	29.1	11		4		1			89	90
Northrup King KT657		96	123	109		36.4	29.4	4		12		2			88	91
Stewart S-74		93	117	105		36.4	29.8	6		9		2			85	92
Tomco Genetic Giant 619		107	122	115		36.0	29.8	6		5		2			76	89
Pioneer 3302		132	127	130		35.3	30.1	1		4		1			92	87
Pioneer 3291	105	103	112	108	107	37.8	30.6	0	4	6	13	2	2	92	85	95
Tomco Genetic Giant UC8300 (sx)		132	138	135		35.8	30.8	2		4		2			82	86
Tomco Genetic Giant 838		110	111	111		36.6	31.4	1		3		2			85	85
AES 801 (ICIA) (late check)	**88**	**87**	**99**	**93**	**91**	**39.8**	**33.1**	4	**9**	4	**13**	2	2	88	**83**	**88**
Pioneer 321	106	114	107	111	109	40.2	33.3	11	16	7	16	1	1	92	87	85
Pioneer 3306 (sx)	123	118	104	111	115	41.3	34.3	29	26	6	16	1	1	89	88	86
Pioneer 3307 (3x)		109	82	96		42.2	35.3	6		4		1			86	88

**sx = single cross; 3x = 3-way cross.

Average performance of varieties tested in 1965, 1966 and 1967.

Population level	Yield bu./acre	Stand pct.	Moist. pct.	Lodging pct. Root	Lodging pct. Stalk	Dropped ears pct.
FIELD 4 UPLAND A						
1965 Moderate population	114.1	88.5	21.0	8.2	19.3	2.0
1965 High population	107.0	86.7	21.4	10.3	38.0	2.6
1966 Not harvested						
1967 Not harvested						
FIELD 4 UPLAND B						
1965 Moderate population	100.1	92.3	24.3	10.4	8.4	1.2
1965 High population	96.1	90.4	24.7	14.6	14.2	2.2
1966 Moderate population	104.6	84.9	21.9	4.0	4.7	2.7
1966 High population	101.5	84.2	22.5	10.0	7.7	3.6
1967 Moderate population	116.5	90.5	34.3	1.3	1.3	0.0
1967 High population	116.2	87.3	35.4	2.2	3.4	0.0

TABLE 4B. AVERAGE PERFORMANCE OF VARIETIES TESTED IN DISTRICT 4 BOTTOMLAND.*

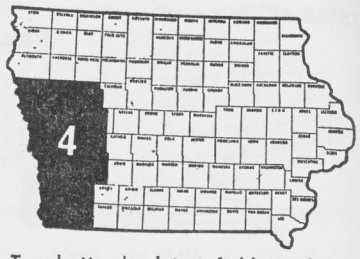
(All varieties are double crosses unless marked otherwise.)**

MODERATE POPULATION—Approximately 16,000 kernels per acre at planting.

Bushels per acre necessary for a significant difference, assuming a 1 in 20 chance of being wrong. LSD values shown can be applied to any two randomly selected varieties.

	No. of hybrids	No. of tests	LSD
2-year average	24	3	9 bu.
3-year average	11	5	7 bu.

For additional information see text.



Two bottomland test fields in district 4. See fig. 1.

Brand and variety	Yield, bu./A. 1965	1966	1967	Av. 66-67	Av. 65-67	Moisture pct. 1967	Av. 66-67	Root lodging pct. Av. 66-67	Av. 65-67	Stalk lodging pct. Av. 66-67	Av. 65-67	Dropped ears pct. Av. 66-67	Av. 65-67	Stand pct. 1965	1966	1967
Average all entries	**110.7**	**92.8**	**118.7**	**105.8**	**107.3**	**22.3**	**20.5**	**0.3**	**3.0**	**17.3**	**19.6**	**.7**	**1.1**	**89.4**	**93.2**	**84.4**
Iowa 4417 (ICIA) (early check)	**85**	**50**	**98**	**74**	**77**	**18.5**	**17.4**	**1**	**1**	**47**	**38**	**0**	**2**	**86**	**87**	**90**
Northrup King PX52 (sx)		81	98	89		18.8	18.1	1		22		0			91	85
Iowa 5772 (ICIA)		96	129	112		19.1	18.2	0		10		1			96	83
T-E Harvestmaster		80	111	95		19.3	18.3	1		15		1			89	84
Northrup King PX610 (3x)		91	119	105		20.5	18.9	0		15		0			91	85
NC + 55SC (3x)		83	117	100		20.3	19.1	0		16		2			91	81
AES 704 (ICIA) (midseason check)	**113**	**92**	**112**	**102**	**106**	**21.0**	**19.3**	**1**	**2**	**14**	**12**	**1**	**1**	**92**	**94**	**75**
Northrup King PX63 (sx)		102	125	114		20.5	19.3	0		23		1			98	87
Iowa 5793 (ICIA)		101	112	107		21.4	19.5	0		8		1			96	87
Northrup King PX616 (3x)	122	96	124	110	114	21.3	19.7	0	3	14	13	2	2	92	94	85
Northrup King KT623A	101	87	122	105	103	20.9	19.8	0	3	38	36	1	2	88	96	87
Pioneer 3510 (sx)	128	105	133	119	122	21.9	20.0	1	2	17	17	0	0	90	93	82
Maygold 2036 (3x)	117	95	129	112	114	24.6	20.8	0	3	18	15	0	1	90	94	86
Iowa 5797 (ICIA)		104	117	110		23.3	20.9	0		11		0			95	86
Northrup King KT657	117	82	121	102	107	23.1	20.9	0	3	26	22	1	2	90	94	88
Pioneer 3291	114	88	121	104	108	21.9	21.0	0	4	15	16	0	0	91	92	85
Tomco Genetic Giant 612		97	108	103		23.8	21.6	0		8		1			92	83
Tomco Genetic Giant 619		97	119	108		23.2	21.6	3		15		0			87	85
AES 801 (ICIA) (late check)	**101**	**82**	**113**	**97**	**98**	**23.3**	**22.0**	**1**	**4**	**20**	**22**	**1**	**2**	**88**	**98**	**85**
NC + 83 DC		105	127	116		24.9	22.2	0		19		1			94	89
Pioneer 321	100	87	121	104	102	24.2	22.5	0	5	19	22	1	2	88	94	87
Pioneer 3306 (sx)	122	114	127	120	121	26.5	22.8	0	2	9	8	0	0	88	96	85
Tomco Genetic Giant UC6000 (sx)		100	128	114		25.1	22.8	0		20		1			93	76
Pioneer 3307 (3x)		100	111	106		29.9	25.8	0		3		1			92	81

**sx = single cross; 3x = 3-way cross.

*Soil types on which test fields were located, along with temperature, rainfall and soil moisture information. See text for explanation.

Soil type	April soil moist.	Rainfall (inches) May Amt. rec.	May Dep. from normal	June Amt. rec.	June Dep. from normal	July Amt. rec.	July Dep. from normal	August Amt. rec.	August Dep. from normal	Temperature May Av.	May Dep. from normal	June Av.	June Dep. from normal	Days max. above 90° Jl.	Aug.
FIELD 4 BOTTOMLAND A															
1965 Salix s.c.l.	Wet	6.4	+2.1	3.0	—2.1	4.3	+0.4	1.2	—3.5	66.5	+3.9	70.1	—2.6	6	9
1966 Not harvested															
1967 McPaul s.l.	Dry	1.9	—1.8	10.0	+5.3	1.7	—1.6	1.2	—2.2	59.4	—2.6	70.4	—1.1	11	7
FIELD 4 BOTTOMLAND B															
1965 Colo s.c.l.	Med.	6.9	+3.1	4.1	—1.0	3.1	—0.4	2.4	—1.1	64.7	+4.4	69.1	—0.9	4	5
1966 Nodaway Variant s.l.	Med.	2.5	—1.3	4.6	—0.5	2.8	—0.7	3.7	+0.2	57.8	—2.5	69.1	—0.9	10	1
1967 Nodaway Variant s.l.	Dry	2.4	—1.4	15.9	+10.8	0.7	—2.8	1.3	—2.2	57.0	—3.3	69.2	—1.2	7	0

s = silt(y) c = clay l = loam

TABLE 4B (continued)

HIGH POPULATION—Approximately 21,000 kernels per acre at planting.

	No. of hybrids	No. of tests	LSD
2-year average	24	3	9 bu.
3-year average	11	5	8 bu.

For additional information see text.

Brand and variety	Yield, bu./A. 1965	1966	1967	Av. 66-67	Av. 65-67	Moisture pct. 1967	Av. 66-67	Root lodging pct. Av. 66-67	Av. 65-67	Stalk lodging pct. Av. 66-67	Av. 65-67	Dropped ears pct. Av. 66-67	Av. 65-67	Stand pct. 1965	1966	1967
Average all entries	**101.3**	**86.8**	**121.9**	**104.4**	**103.6**	**23.1**	**21.0**	**0**	**3.2**	**22.2**	**24.0**	**.9**	**1.4**	**88.5**	**90.4**	**82.9**
Iowa 4417 (ICIA) (early check)	**86**	**55**	**98**	**77**	**80**	**17.6**	**16.9**	**0**	**1**	**45**	**37**	**0**	**2**	**89**	**93**	**89**
Northrup King PX52 (sx)		73	107	90		19.8	18.6	1		24		1			92	79
Iowa 5772 (ICIA)		92	126	109		20.4	18.8	0		18		1			92	84
Northrup King PX610 (3x)		84	125	105		20.3	18.8	0		26		0			91	82
T-E Harvestmaster		76	117	96		20.8	19.4	0		21		1			83	83
Iowa 5793 (ICIA)		95	114	105		20.8	19.5	0		9		1			90	80
Northrup King PX63 (sx)		90	131	111		21.0	19.6	0		35		0			93	90
Northrup King KT623A	94	81	125	103	100	21.8	19.9	0	2	30	33	0	1	87	95	84
Northrup King PX616 (3x)	115	97	124	110	112	21.9	20.1	0	3	19	21	2	2	90	93	80
NC + 55 SC (3x)		79	133	106		21.6	20.1	0		27		2			91	87
AES 704 (ICIA) (midseason check)	**106**	**80**	**116**	**98**	**101**	**21.8**	**20.3**	**0**	**4**	**15**	**13**	**2**	**2**	**89**	**88**	**79**
Pioneer 3510 (sx)	106	86	137	111	110	22.3	20.6	0	1	33	31	0	1	88	89	85
Iowa 5797 (ICIA)		103	122	112		23.0	20.8	0		16		0			92	84
Maygold 2036 (3x)	105	81	134	107	106	25.1	21.0	0	7	25	20	0	0	90	94	85
Northrup King KT657	95	78	125	102	99	23.3	21.4	0	2	32	30	1	2	87	94	81
Pioneer 3291	93	95	119	107	102	23.0	21.6	0	4	19	21	1		90	90	83
Tomco Genetic Giant 612		93	121	107		24.3	22.1	0		14		1			93	84
Tomco Genetic Giant 619		92	119	106		24.6	22.4	0		20		1			82	78
Pioneer 321	107	97	116	107	107	24.9	22.6	0	4	24	27	1	1	90	91	81
Tomco Genetic Giant UC6000 (sx)		88	135	111		25.4	23.0	0		25		1			86	78
Pioneer 3306 (sx)	118	109	124	117	117	26.3	23.1	0	6	9	10	1	1	90	90	85
NC + 83 DC		85	128	107		25.3	23.2	0		20		1			87	86
AES 801 (ICIA) (late check)	**90**	**72**	**120**	**96**	**94**	**26.4**	**23.8**	**0**	**5**	**17**	**21**	**2**	**2**	**90**	**92**	**81**
Pioneer 3307 (3x)		102	110	106		31.8	27.4	0		10		1			89	81

**sx = single cross; 3x = 3-way cross.

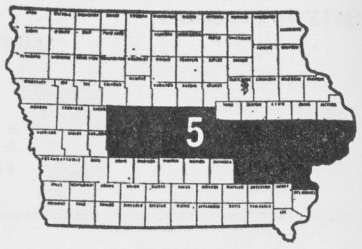
Average performance of varieties tested in 1965, 1966 and 1967.

Population level	Yield bu./acre	Stand pct.	Moist. pct.	Lodging pct. Root	Lodging pct. Stalk	Dropped ears pct.
FIELD 4 BOTTOMLAND A						
1965 Moderate population	112.3	88.3	17.7	14.9	18.2	3.3
1965 High population	105.7	88.3	17.8	16.7	26.3	4.4
1966 Not harvested						
1967 Moderate population	125.2	83.1	22.9	0.0	0.5	0.0
1967 High population	128.9	78.5	23.2	0.0	1.8	0.1
FIELD 4 BOTTOMLAND B						
1965 Moderate population	106.5	89.1	21.0	0.0	12.3	0.6
1965 High population	101.6	87.3	21.6	0.0	17.3	0.9
1966 Moderate population	90.9	92.8	19.0	0.6	27.9	1.5
1966 High population	87.8	89.1	19.4	0.1	29.0	1.6
1967 Moderate population	114.0	85.9	23.3	0.0	5.7	0.0
1967 High population	118.3	86.6	24.4	0.0	16.7	0.1

TABLE 5. AVERAGE PERFORMANCE OF VARIETIES TESTED IN DISTRICT 5.*

(All varieties are double crosses unless marked otherwise.)*

MODERATE POPULATION—Approximately 17,300 kernels per acre at planting.



Bushels per acre necessary for a significant difference, assuming a 1 in 20 chance of being wrong. LSD values shown can be applied to any two randomly selected varieties.

	No. of hybrids	No. of tests	LSD
2-year average	30	5	10 bu.
3-year average	13	8	7 bu.

For additional information see text.

Brand and variety	Yield, bu./A. 1965	1966	1967	Av. 66-67	Av. 65-67	Moisture pct. 1967	Av. 66-67	Root lodging pct. Av. 66-67	Av. 65-67	Stalk lodging pct. Av. 66-67	Av. 65-67	Dropped ears pct. Av. 66-67	Av. 65-67	Stand pct. 1965	1966	1967
Average all entries	**112.2**	**133.3**	**121.9**	**127.6**	**121.9**	**24.9**	**22.9**	**6.5**	**6.2**	**2.9**	**6.0**	**.7**	**.7**	**91.9**	**79.0**	**87.1**
Iowa 4417 (ICIA) (early check)	**92**	**105**	**98**	**102**	**99**	**19.8**	**17.9**	**14**	**11**	**7**	**9**	**1**	**2**	**90**	**80**	**88**
Cornelius C60 SX (sx)		147	126	136		20.4	19.8	8		3		1			79	88
Northrup King PX52 (sx)		120	117	118		21.3	20.1	12		2		0			84	89
Northrup King PX610 (3x)		134	126	130		21.8	20.4	2		3		1			80	84
Iowa State DX-100		130	120	125		22.9	20.6	4		3		2			77	92
T-E Bonusmaker (sx)		114	121	117		22.5	20.6	11		3		1			75	90
T-E Harvestmaster		123	118	121		23.1	20.6	7		2		0			80	87
Middlekoop M301 (sx)		139	123	131		21.7	20.8	6		3		3			87	86
Pioneer 3510 (sx)	125	144	134	139	134	23.6	21.8	13	10	2		1	1	92	75	89
Iowa State 3-way (3x)		128	103	116		24.1	21.9	6		4		1			85	87
Northrup King PX616 (3x)	121	136	130	133	129	23.5	22.0	1	2	3	7	0	1	96	73	84
Maygold 68	106	145	115	130	122	22.7	22.1	3	3	2	5	0	1	92	83	83
Middlekoop M43 (3x)	112	138	130	134	127	23.3	22.1	9	10	2	7	0	0	91	78	90
McAllister MX6504 (3x)		137	134	135		24.2	22.2	5		5		1			77	87
Middlekoop M303 (sx)		140	137	139		24.8	22.2	5		7		1			76	88
Northrup King KT626	112	133	112	123	119	24.4	22.4	9	7	3	5	2	2	95	74	85
AES 704 (ICIA) (midseason check)	**111**	**124**	**126**	**125**	**120**	**25.2**	**22.5**	**6**	**5**	**1**	**4**	**0**	**0**	**91**	**75**	**85**
Middlekoop M35 (sx)	114	141	141	141	132	26.4	22.7	5	4	3	6	1	0	94	84	94
McAllister 44B	114	126	128	127	123	24.5	23.2	7	7	3	6	1	1	93	81	86
Pioneer 3376 (sx)		145	138	141		26.9	24.3	3		0		0			78	87
Tomco Genetic Giant 815		138	133	136		26.9	24.3	6		4		1			83	88
Pioneer 3206	118	127	126	127	124	26.5	24.4	1	3	1	4	0	0	89	80	89
Pioneer 3306 (sx)	120	138	125	131	127	25.8	24.6	4	3	1	6	0	0	87	80	83
McAllister SX6509 (sx)		143	116	129		28.2	25.1	1		1		1			79	71
Tomco Genetic Giant 838		133	102	118		28.6	25.3	8		1		1			78	80
Pioneer 321	115	130	108	119	118	28.1	25.6	6	8	3	6	1	1	93	80	89
Tomco Genetic Giant UC6000 (sx)		145	133	139		29.5	25.8	10		2		2			77	91
AES 801 (ICIA) (late check)	**99**	**119**	**118**	**119**	**112**	**28.1**	**26.4**	**6**	**9**	**5**	**7**	**1**	**1**	**91**	**73**	**91**
Tomco Genetic Giant UC8300 (sx)		142	118	130		30.4	26.7	14		2		0			82	92
Pioneer 3307 (3x)		138	103	121		30.5	27.6	5		2		0			82	90

**sx = single cross; 3x = 3-way cross.

*Soil types on which test fields were located, along with temperature, rainfall and soil moisture information. See text for explanation.

Soil type	April soil moist.	Rainfall (inches) May Amt. rec.	May Dep. from normal	June Amt. rec.	June Dep. from normal	July Amt. rec.	July Dep. from normal	August Amt. rec.	August Dep. from normal	Temperature May Av.	May Dep. from normal	June Av.	June Dep. from normal	Days max. above 90° Jl.	Aug.
FIELD 5A															
1965 Webster s.c.l.	Wet	2.6	—1.8	3.2	—2.1	0.8	—3.1	2.1	—1.9	66.2	+5.3	69.4	—1.0	7	11
1966 Not harvested															
1967 Nicollet l	Med.	2.5	—1.6	15.3	+10.5	3.0	—0.9	1.5	—2.5	56.2	—4.7	67.4	—3.0	1	0
FIELD 5B															
1965 Mahaska s.c.l.	Wet	3.2	—1.2	1.9	—3.1	3.1	—0.5	4.2	+0.7	63.4	+2.3	66.8	—4.0	5	6
1966 Mahaska s.c.l.	Wet	7.8	+3.4	7.9	+2.9	2.5	—1.1	1.5	—2.0	53.4	—7.7	67.1	—3.7	11	0
1967 Mahaska s.c.l.	Wet	1.4	—3.0	9.3	+4.3	0.8	—2.8	2.6	—0.9	54.0	—7.1	66.7	—4.1	5	0
FIELD 5C															
1965 Muscatine s.c.l.	Wet	4.0	—0.0	2.4	—2.5	2.3	—1.6	5.1	+1.6	65.0	+4.2	69.1	—1.4	6	6
1966 Tama s.c.l.	Wet	3.8	—0.2	5.8	+0.9	3.8	—0.1	0.0	—3.5	56.3	—4.5	69.9	—0.6	18	3
1967 Muscatine s.c.l.	Wet	1.1	—2.8	5.2	+0.5	3.6	—0.4	7.8	+4.3	56.8	—4.0	70.9	+0.4	7	0

s = silt (y); c = clay; l = loam.

TABLE 5 (continued)

HIGH POPULATION—Approximately 23,400 kernels per acre at planting.

	No. of hybrids	No. of tests	LSD
2-year average	**30**	**5**	**10 bu.**
3-year average	**13**	**8**	**7 bu.**

For additional information see text.

Brand and variety	Yield, bu./A. 1965	1966	1967	Av. 66-67	Av. 65-67	Moisture pct. 1967	Av. 66-67	Root lodging pct. Av. 66-67	Av. 65-67	Stalk lodging pct. Av. 66-67	Av. 65-67	Dropped ears pct. Av. 66-67	Av. 65-67	Stand pct. 1965	1966	1967
Average all entries	**111.6**	**139.9**	**118.7**	**129.3**	**122.5**	**25.6**	**23.2**	**5.5**	**6.7**	**5.8**	**10.8**	**1.1**	**1.0**	**91.9**	**77.4**	**83.9**
Iowa 4417 (ICIA) (early check)	**81**	**111**	**107**	**109**	**100**	**20.2**	**18.5**	**11**	**10**	**10**	**15**	**1**	**2**	**89**	**79**	**86**
Northrup King PX52 (sx)		130	112	121		22.1	20.2	8		4		0			86	84
Cornelius C60 SX (sx)		141	122	132		21.5	20.4	4		11		2			76	84
T-E Bonusmaker (sx)		140	124	132		23.1	20.5	5		2		1			81	83
Northrup King PX610 (3x)		144	136	140		21.8	20.6	3		10		1			82	87
Middlekoop M301 (sx)		152	136	144		22.2	21.1	2		6		1			82	86
Northrup King PX616 (3x)	121	152	126	139	133	23.3	21.2	2	2	8	14	2	2	93	74	87
Iowa State DX-100		135	104	119		22.9	21.3	5		5		2			75	86
T-E Harvestmaster		125	113	119		23.7	21.4	4		5		1			76	83
Iowa State 3-way (3x)		125	102	113		23.2	21.5	8		6		2			85	85
Maygold 68	111	133	110	121	118	23.5	22.1	5	4	4	8	1	1	88	85	76
Middlekoop M43 (3x)	110	134	124	129	123	23.3	22.1	9	11	8	14	1	1	91	79	84
McAllister MX6504 (3x)		145	143	144		24.7	22.3	2		10		2			78	86
Pioneer 3510 (sx)	125	146	123	134	131	24.2	22.5	10	8	5	10	0	0	92	74	85
AES 704 (ICIA) (midseason check)	**113**	**127**	**118**	**122**	**119**	**24.8**	**22.7**	**5**	**5**	**4**	**7**	**1**	**2**	**94**	**71**	**87**
Middlekoop M303 (sx)		163	129	146		25.2	22.7	3		15		1			76	84
Northrup King KT626	107	137	113	125	119	24.8	23.1	8	7	4	8	2	2	91	79	77
McAllister 44B	117	147	123	135	129	26.0	23.3	8	6	5	10	1	1	93	83	81
Middlekoop M35 (sx)	122	149	136	143	136	27.9	23.8	3	2	8	9	0	0	93	76	88
Pioneer 3376 (sx)		152	137	144		26.4	24.0	3		1		0			77	85
Tomco Genetic Giant 815		142	127	135		26.6	24.6	3		4		2			75	84
Pioneer 3206	116	140	112	126	122	28.8	25.3	3	4	3	9	1	0	92	73	88
Pioneer 3306 (sx)	121	169	124	146	138	28.4	25.3	6	6	5	12	0	0	91	82	87
McAllister SX6509 (sx)		138	113	126		28.0	25.4	3		4		3			76	76
Pioneer 321	118	144	114	129	125	28.5	25.8	6	9	8	15	1	1	93	80	82
Tomco Genetic Giant UC6000 (sx)		144	118	131		30.5	26.3	8		6		3			72	86
Tomco Genetic Giant 838		143	106	125		30.0	26.4	4		4		1			77	78
Pioneer 3307 (3x)		139	107	123		31.3	27.4	3		5		0			73	84
Tomco Genetic Giant UC8300 (sx)		137	112	124		31.6	27.4	8		2		1			74	84
AES 801 (ICIA) (late check)	**89**	**115**	**93**	**104**	**99**	**28.5**	**27.6**	**9**	**12**	**4**	**9**	**1**	**2**	**94**	**70**	**82**

**sx = single cross; 3x = 3-way cross.

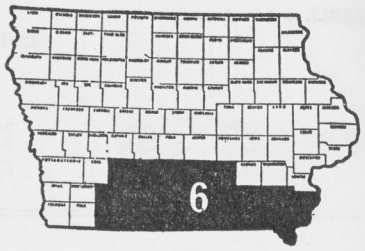
Average performance of varieties tested in 1965, 1966 and 1967.

Population level	Yield bu./acre	Stand pct.	Moist. pct.	Lodging pct. Root	Lodging pct. Stalk	Dropped ears pct.
FIELD 5A						
1965 Moderate population	102.2	95.2	23.5	0.1	22.1	1.3
1965 High population	94.3	95.6	24.6	0.1	34.9	1.2
1966 Not harvested						
1967 Moderate population	118.8	88.0	24.4	6.6	2.9	0.5
1967 High population	115.1	83.7	25.1	4.9	3.6	0.6
FIELD 5B						
1965 Moderate population	101.6	88.6	33.0	14.0	10.4	1.0
1965 High population	102.1	86.1	32.7	17.4	12.9	1.1
1966 Moderate population	132.9	86.3	19.4	0.5	3.0	1.7
1966 High population	134.0	83.1	19.3	0.6	6.5	2.4
1967 Moderate population	127.3	87.9	25.4	0.0	3.5	0.3
1967 High population	127.0	85.2	26.0	0.2	7.2	0.3
FIELD 5C						
1965 Moderate population	123.9	91.6	23.3	5.9	10.6	1.0
1965 High population	124.8	91.7	23.1	3.3	6.1	0.7
1966 Moderate population	128.8	71.7	22.0	0.0	1.1	0.9
1966 High population	141.3	68.8	22.7	0.0	1.1	1.1
1967 Moderate population	124.8	86.5	24.5	31.4	2.4	0.1
1967 High population	127.2	82.3	25.0	26.3	6.6	0.0

TABLE 6. AVERAGE PERFORMANCE OF VARIETIES TESTED IN DISTRICT 6.*

(All varieties are double crosses unless marked otherwise.)**

MODERATE POPULATION—Approximately 17,300 kernels per acre at planting.



Bushels per acre necessary for a significant difference, assuming a 1 in 20 chance of being wrong. LSD values shown can be applied to any two randomly selected varieties.

	No. of hybrids	No. of tests	LSD
2-year average	23	4	12 bu.
3-year average	8	7	8 bu.

For additional information see text.

Brand and variety	Yield, bu./A. 1965	1966	1967	Av. 66-67	Av. 65-67	Moisture pct. 1967	Av. 66-67	Root lodging pct. Av. 66-67	Av. 65-67	Stalk lodging pct. Av. 66-67	Av. 65-67	Dropped ears pct. Av. 66-67	Av. 65-67	Stand pct. 1965	1966	1967
Average all entries	**100.8**	**127.6**	**120.5**	**124.1**	**111.8**	**25.3**	**21.4**	**.5**	**9.5**	**4.9**	**10.3**	**.7**	**1.1**	**90.4**	**83.2**	**86.1**
Iowa 4417 (ICIA) (early check)	**71**	**79**	**104**	**92**	**85**	**19.9**	**16.9**	**0**	**7**	**14**	**20**	**1**	**1**	**86**	**88**	**86**
Dockendorff 306 (3x)		135	126	131		22.3	18.3	0		3		1			86	87
Middlekoop M301 (sx)		122	130	126		22.7	18.5	0		5		3			79	84
Northrup King PX616 (3x)		118	130	124		22.6	19.0	0		4		0			78	87
T-E Harvestmaster		100	126	113		22.9	19.3	1		8		0			85	89
Dockendorff PX39		137	119	128		23.4	20.1	0		7		0			91	91
AES 704 (ICIA) (midseason check)	**99**	**111**	**108**	**110**	**106**	**24.7**	**20.2**	**0**	**11**	**4**	**6**	**1**	**2**	**91**	**76**	**85**
Middlekoop M35 (sx)	102	128	129	128	120	24.9	20.5	0	8	6	8	0	0	94	89	88
Northrup King KT626	100	113	120	116	111	24.0	20.6	0	10	4	8	0	1	91	83	87
Middlekoop M303 (sx)		125	122	124		23.3	21.1	0		9		1			80	82
Pioneer 3376 (sx)		147	138	143		26.0	21.3	0		1		0			87	91
Pioneer 3306 (sx)	129	145	133	139	136	24.9	21.4	0	10	4	10	0	0	88	78	82
McAllister SX6509 (sx)		131	103	117		26.4	21.8	0		3		1			83	75
Tomco Genetic Giant 838		135	117	126		26.3	22.4	2		3		0			82	87
Tomco Genetic Giant UC8300 (sx)		145	115	130		27.6	22.6	3		3		1			88	87
Northrup King PX674 (3x)		137	110	123		27.3	22.8	0		6		1			82	86
Pioneer 3206	109	128	118	123	118	26.7	22.8	0	10	3	8	1	2	94	91	88
Stull 807 SX (sx)		158	125	142		27.3	22.9	1		3		1			83	86
Tomco Genetic Giant UC6000 (sx)		143	132	137		26.7	23.2	2		4		1			77	81
AES 801 (ICIA) (late check)	**93**	**97**	**114**	**106**	**101**	**27.6**	**23.6**	**0**	**11**	**6**	**11**	**2**	**3**	**89**	**73**	**88**
Pioneer 321	104	137	114	126	118	27.3	24.1	0	12	8	13	0	0	91	93	87
Tomco Genetic Giant 956		115	126	121		27.9	24.1	0		4		1			75	90
Pioneer 3307 (3x)		150	113	132		29.2	24.9	1		3		0			88	89

**sx = single cross; 3x = 3-way cross.

*Soil types on which test fields were located, along with temperature, rainfall and soil moisture information. See text for explanation.

Soil type	April soil moist.	Rainfall (inches) May Amt. rec.	May Dep. from normal	June Amt. rec.	June Dep. from normal	July Amt. rec.	July Dep. from normal	August Amt. rec.	August Dep. from normal	Temperature May Av.	May Dep. from normal	June Av.	June Dep. from normal	Days max. above 90° Jl.	Aug.
FIELD 6A															
1965 Macksburg s.c.l.	Med.	4.7	+0.8	5.7	+0.9	4.8	+2.2	4.4	—0.1	65.5	+4.5	69.2	—1.6	3	9
1966 Not harvested															
1967 Macksburg s.c.l.	Dry	4.2	+0.3	13.5	+8.7	3.2	—0.4	1.9	—3.6	57.5	—3.5	68.9	—1.9	3	0
FIELD 6B															
1965 Mahaska s.c.l.	Wet	3.3	—0.7	3.4	—1.8	4.8	+1.4	2.7	—1.2	66.9	+4.1	70.6	—1.9	6	9
1966 Not harvested															
1967 Mahaska s.c.l.	Wet	2.8	—1.2	5.9	+0.7	3.2	—0.2	4.5	+0.6	57.6	—5.2	70.1	—2.4	11	1
FIELD 6C															
1965 Taintor s.c.l.	Wet	1.8	—2.1	4.4	—0.8	4.0	+0.8	12.6	+8.4	66.6	+4.1	69.8	—2.4	7	6
1966 Mahaska s.c.l.	Wet	4.5	+0.6	5.6	+0.4	2.4	—0.8	0.7	—3.5	57.4	—5.1	69.6	—2.6	16	6
1967 Taintor s.c.l.	Wet	2.8	—1.1	3.5	—1.7	5.4	+2.2	2.3	—1.1	56.1	—6.4	69.6	—2.6	5	0

s.c.l. = silty clay loam

TABLE 6 (continued)

HIGH POPULATION—Approximately 23,400 kernels per acre at planting.

	No. of hybrids	No. of tests	LSD
2-year average	23	4	12 bu.
3-year average	8	7	9 bu.

For additional information see text.

Brand and variety	Yield, bu./A. 1965	1966	1967	Av. 66-67	Av. 65-67	Moisture pct. 1967	Av. 66-67	Root lodging pct. Av. 66-67	Av. 65-67	Stalk lodging pct. Av. 66-67	Av. 65-67	Dropped ears pct. Av. 66-67	Av. 65-67	Stand pct. 1965	1966	1967
Average all entries	**102.5**	**108.7**	**125.8**	**117.2**	**107.4**	**25.7**	**21.5**	**1.3**	**10.0**	**11.3**	**16.3**	**.9**	**1.1**	**92.5**	**78.4**	**83.9**
Iowa 4417 (ICIA) (early check)	**71**	**70**	**98**	**84**	**80**	**21.1**	**17.0**	**4**	**11**	**16**	**22**	**0**	**1**	**92**	**79**	**84**
Middlekoop M301 (sx)		113	127	120		23.7	18.8	0		13		0			77	87
Dockendorff 306 (3x)		105	133	119		22.0	18.9	1		15		0			78	83
Northrup King PX616 (3x)		99	133	116		23.1	19.3	0		17		1			87	85
T-E Harvestmaster		87	127	107		23.2	19.3	0		16		1			84	86
AES 704 (ICIA) (midseason check)	**104**	**114**	**117**	**115**	**112**	**23.9**	**19.7**	**0**	**10**	**6**	**9**	**1**	**2**	**94**	**73**	**75**
Northrup King KT626	110	78	120	99	103	24.3	20.1	1	11	13	14	2	3	91	61	86
Middlekoop M303 (sx)		119	127	123		24.5	20.6	1		16		1			64	80
Middlekoop M35 (sx)	108	89	135	112	111	26.0	21.1	4	9	17	19	0	0	91	79	89
Dockendorff PX39		97	129	113		24.0	21.4	2		11		1			70	84
Pioneer 3306 (sx)	127	121	147	134	131	24.5	21.4	1	9	7	15	1	1	93	76	83
McAllister SX6509 (sx)		128	121	124		26.7	22.3	1		3		2			75	70
Pioneer 3206	100	111	122	116	111	26.0	22.3	1	10	13	18	0	1	94	82	85
Pioneer 3376 (sx)		106	143	124		26.1	22.4	0		7		1			92	87
AES 801 (ICIA) (late check)	**88**	**100**	**120**	**110**	**103**	**26.5**	**22.5**	**0**	**8**	**10**	**17**	**1**	**2**	**90**	**82**	**91**
Northrup King PX674 (3x)		118	127	122		28.3	22.8	2		6		2			74	90
Pioneer 321	112	103	115	109	110	27.4	22.8	1	13	13	17	1	1	94	81	83
Stull 807SX (sx)		115	136	125		26.8	22.9	2		11		1			73	85
Tomco Genetic Giant 838		108	123	115		27.5	23.1	3		16		2			91	82
Tomco Genetic Giant UC6000 (sx)		133	135	134		27.9	23.3	1		8		2			78	86
Pioneer 3307 (3x)		137	106	122		29.6	23.9	1		8		1			83	81
Tomco Genetic Giant 956		130	127	128		27.6	23.9	0		12		1			84	86
Tomco Genetic Giant UC8300 (sx)		120	129	124		29.9	25.5	4		6		0			83	84

**sx = single cross; 3x = 3-way cross.

Average performance of varieties tested in 1965, 1966 and 1967.

Population level	Yield bu./acre	Stand pct.	Moist. pct.	Lodging pct. Root	Lodging pct. Stalk	Dropped ears pct.
FIELD 6A						
1965 Moderate population	94.8	91.6	22.5	4.8	11.6	4.8
1965 High population	95.1	91.8	22.8	6.5	16.5	5.7
1966 Not harvested						
1967 Moderate population	91.4	87.6	28.7	0.1	2.8	0.1
1967 High population	113.1	87.2	28.3	0.0	7.2	0.3
FIELD 6B						
1965 Moderate population	106.4	90.3	25.7	8.1	16.8	0.9
1965 High population	102.1	90.4	26.0	12.0	22.5	0.9
1966 Not harvested						
1967 Moderate population	134.7	82.3	22.7	2.2	2.2	0.1
1967 High population	135.4	82.5	23.4	5.8	2.8	0.4
FIELD 6C						
1965 Moderate population	101.2	89.5	18.3	72.6	24.2	1.0
1965 High population	102.2	88.6	18.7	65.0	32.6	1.0
1966 Moderate population	122.6	84.6	17.5	0.4	7.6	1.3
1966 High population	104.0	79.7	17.3	0.1	16.7	1.4
1967 Moderate population	134.7	86.6	23.9	0.2	2.3	0.2
1967 High population	133.8	80.3	24.6	0.6	4.5	0.2

TABLE 7. AVERAGE PERFORMANCE OF VARIETIES TESTED IN NORTHERN MATURITY TRIAL, KANAWHA.*

(All varieties are double crosses unless marked otherwise.)**

Moisture percentages and number of days between silking necessary for a significant difference, assuming a 1 in 20 chance of being wrong. LSD values shown can be applied to any two randomly selected varieties.

	LSD		
	Moist pct. at 60 days	Moist pct. at av. hvst.	50 pct. silk
2-year average	3.0	1.4	1.2
3-year average	2.4	0.3	0.3

Brand and variety	Moist. pct. 60 days after av. silk date of test field	Moist. pct. on av. harvest date	Date 50 pct. silked, July:
3-Year Average 1965-66-67			
Average all entries	**41.5**	**20.6**	**26.2**
Pioneer 3715 (3x)	36.5	18.5	25
Iowa 4417 (ICIA) (early check)	**36.7**	**18.4**	**23**
Cornelius C35	38.2	18.6	24
Minhybrid 417 (ICIA) (midseason check)	**38.7**	**19.6**	**26**
Cornelius C40SX (sx)	38.9	19.7	23
Iowa 5480 (ICIA)	38.9	19.1	26
Pioneer 3620	39.3	18.9	24
Cornelius C48	39.8	20.3	25
McAllister TX303 (3x)	41.5	20.7	26
Iowa 5496 (ICIA)	41.9	20.1	26
Middlekoop M35 (sx)	41.9	22.6	26
Pioneer 3558 (sx)	43.5	19.2	27
AES 704 (ICIA) (late check)	**44.2**	**22.0**	**27**
Middlekoop M43 (3x)	44.6	23.1	30
Iowa 5654 (ICIA)	45.1	20.7	29
Pioneer 3510 (sx)	47.6	24.9	29
Pioneer 3291	48.0	24.6	29
2-Year Average 1966-67			
Average all entries	**41.4**	**20.7**	**27.4**
Iowa 5563 (ICIA)	36.3	18.0	24
Iowa 4417 (ICIA) (early check)	**36.7**	**18.1**	**24**
Pioneer 3715 (3x)	37.0	18.1	26
Pioneer 3620	37.2	18.4	24
Cornelius C35	37.6	18.3	25
Iowa 5480 (ICIA)	38.0	18.7	28
Minhybrid 417 (ICIA) (midseason check)	**38.2**	**19.3**	**28**
Iowa 5664 (ICIA)	38.5	19.7	27
Burt's M-301 (3x)	38.8	19.0	26
Cornelius C40 SX (sx)	39.1	19.2	24
Pioneer 3773 (sx)	39.1	19.1	26
T-E Bonusmaker (sx)	39.3	19.0	24
McAllister TX303 (3x)	39.8	20.0	26
Tomco Genetic Giant UC 4400 (sx)	39.8	19.8	24
Iowa 5676 (ICIA)	40.0	18.6	28
Cornelius C48	40.2	19.8	27
Tomco Genetic Giant 440	40.3	20.2	26
N C+ 30SS (sx)	40.6	19.3	26
Cornelius C60 SX (sx)	40.8	19.8	27
Northrup King PX52 (sx)	40.9	18.9	22
Iowa 5496 (ICIA)	41.9	20.7	27
Middlekoop M35 (sx)	41.9	22.6	27
Pioneer 3558 (sx)	42.0	19.3	29
United-Hagie IXL6 (sx)	42.1	19.6	27
Northrup King PX610 (3x)	42.4	20.5	29
Pioneer 3566 (3x)	42.9	21.1	28
Tomco Genetic Giant UC 8300 (sx)	42.9	25.7	28
N C+ 55SC (3x)	43.0	21.6	30
Northrup King PX616 (3x)	43.3	21.6	30
Corn King 513 (3x)	43.4	20.2	30
AES 704 (ICIA) (late check)	**43.6**	**21.9**	**28**
Middlekoop M43 (3x)	43.8	23.9	31
Middlekoop M301 (sx)	43.8	20.9	28
Tomco Genetic Giant UC 4600 (sx)	44.1	21.3	28
Northrup King PX63 (sx)	44.3	22.2	28
Iowa 5654 (ICIA)	44.4	20.8	30
Pioneer 3567 (sx)	44.5	21.4	29
Pioneer 3510 (sx)	44.8	26.8	30
Tomco Genetic Giant UC 6000 (sx)	44.8	28.8	32
T-E Harvestmaster	46.5	21.5	30
Pioneer 3291	46.8	24.9	31

**sx = single cross; 3x = 3-way cross.

***Soil types on which test fields were located, along with temperature, rainfall and soil moisture information. See text for explanation.**

Soil type	April soil moist.	Rainfall (inches) May Amt. rec.	May Dep. from normal	June Amt. rec.	June Dep. from normal	July Amt. rec.	July Dep. from normal	August Amt. rec.	August Dep. from normal	Temperature May Av.	May Dep. from normal	June Av.	June Dep. from normal	Days max. above 90° Jl.	Days max. above 90° Aug
NORTHERN MATURITY (Kanawha)															
1965 Webster s.c.l.	Wet	3.7	—0.4	2.5	—2.6	3.9	+0.5	3.1	—0.8	62.9	+1.3	68.9	—0.6	3	4
1966 Webster s.c.l.	Wet	3.2	—1.0	6.7	—1.6	2.5	—0.9	2.6	—1.2	55.6	—6.0	69.3	—0.2	12	2
1967 Webster s.c.l.	Med.	2.6	—1.6	9.4	+4.4	1.2	—2.2	3.2	—0.7	54.8	—6.8	68.1	—1.4	2	0

s. c. l. = silty clay loam.

TABLE 8. AVERAGE PERFORMANCE OF VARIETIES TESTED IN SOUTHERN MATURITY TRIAL, ANKENY.*

(All varieties are double crosses unless marked otherwise.)**

Moisture percentages and number of days between silking necessary for a significant difference, assuming a 1 in 20 chance of being wrong. LSD values shown can be applied to any two randomly selected varieties.

	LSD		
	Moist pct. at 60 days	Moist pct. at av. hvst.	50 pct. silk
2-year average	3.2	2.3	2.0
3-year average	2.4	0.5	0.5

Brand and variety	Moist. pct. 60 days after av. silk date of test field	Moist. pct. on av. harvest date	Date 50 pct. silked, July:
3-Year Average 1965-66-67			
Average all entries	**39.5**	**19.5**	**22.9**
Iowa 4417 (ICIA) (early check)	**30.4**	**16.3**	**17**
McAllister 44B	37.5	19.5	20
Maygold 68	38.3	18.1	22
Maygold 2036 (3x)	38.7	19.9	24
Middlekoop M43 (3x)	38.9	19.5	23
Northrup King PX616 (3x)	39.4	19.8	24
Middlekoop M35 (sx)	39.6	19.4	20
Northrup King KT623A	39.7	19.0	23
Northrup King KT626	40.1	19.2	24
AES 704 (ICIA) (midseason check)	**40.2**	**19.6**	**23**
Pioneer 3291	40.3	20.5	23
Northrup King KT657	40.5	19.6	23
Pioneer 321	40.7	20.0	25
Pioneer 3510 (sx)	40.9	18.4	22
Pioneer 3206	41.3	20.6	24
Pioneer 3306 (sx)	42.5	20.5	26
AES 801 (ICIA) (late check)	**43.1**	**21.9**	**26**
2-Year Average 1966-67			
Average all entries	**40.7**	**18.6**	**25.7**
Iowa 4417 (ICIA) (early check)	**31.3**	**15.6**	**20**
Cornelius C60 SX (sx)	36.7	16.8	22
Iowa State 3-Way (3x)	37.2	17.5	21
Northrup King PX52 (sx)	37.5	15.4	20
Maygold 2036 (3x)	38.6	18.6	27
T-E Bonusmaker (sx)	38.7	16.5	20
Iowa 5772 (ICIA)	38.8	16.2	26
T-E Harvestmaster	38.9	17.0	25
Northrup King PX63 (sx)	38.9	18.0	24
Iowa State DX-100	39.3	16.8	23
Northrup King PX610 (3x)	39.3	17.2	25
Dockendorff 306 (3x)	39.4	16.7	22
McAllister 44B	39.6	18.3	23
Tomco Genetic Giant 815	39.6	19.1	27
Iowa 5793 (ICIA)	39.8	18.2	27
Maygold 68	39.9	17.3	25
Tomco Genetic Giant UC 8300 (sx)	39.9	19.1	21
Dockendorff PX39	40.0	17.3	26
N C+ 55SC (3x)	40.1	16.3	25
Pioneer 3291	40.1	19.3	27
McAllister MX6504 (3x)	40.6	17.4	26
N C+ 83DC	40.6	18.3	26
Northrup King PX616 (3x)	40.6	19.0	27
Iowa 5797 (ICIA)	40.9	17.3	27
Middlekoop M43 (3x)	40.9	18.5	26
Middlekoop M301 (sx)	40.9	18.3	25
Northrup King KT623A	40.9	18.0	27
Pioneer 3302	40.9	20.8	28
Middlekoop M303 (sx)	41.1	17.1	27
Pioneer 3376 (sx)	41.1	20.3	27
Pioneer 321	41.6	18.8	27
Tomco Genetic Giant 612	41.8	21.6	27
Pioneer 3510 (sx)	41.9	17.4	24
Stewart S-74	41.9	20.7	28
Tomco Genetic Giant 619	41.9	19.4	27
Northrup King PX674 (3x)	42.0	19.1	28
Northrup King KT626	42.1	18.4	27
Tomco Genetic Giant 838	42.1	20.5	29
Northrup King KT657	42.3	18.7	26
McAllister SX6509 (sx)	42.4	20.6	27
Stull 807SX (sx)	42.5	20.2	29
AES 704 (ICIA) (midseason check)	**42.6**	**19.2**	**26**
Middlekoop M35 (sx)	42.8	18.8	22
Pioneer 3206	42.8	19.5	27
Tomco Genetic Giant UC6000 (sx)	42.8	20.8	27
Pioneer 3306 (sx)	44.3	19.6	29
AES 801 (ICIA) (late check)	**44.6**	**21.3**	**29**
Pioneer 3307 (3x)	45.4	22.9	30
Tomco Genetic Giant 956	46.2	21.5	30

**sx = single cross; 3x = 3-way cross.

***Soil types on which test fields were located, along with temperature, rainfall and soil moisture information. See text for explanation.**

			Rainfall (inches)								Temperature					
			May		June		July		August		May		June		Days max. above 90°	
Soil type		April soil moist.	Amt. rec.	Dep. from normal	Amt. rec.	Dep. from normal	Amt. rec.	Dep. from normal	Amt. rec.	Dep. from normal	Av.	Dep. from normal	Av.	Dep. from normal	Jl.	Aug.
SOUTHERN MATURITY (Ankeny)																
1965	Nicollet l	Med.	3.8	—0.2	5.9	+1.0	2.5	—0.6	2.4	—1.5	64.8	+4.1	70.9	—0.7	6	9
1966	Nicollet l	Wet	5.2	+1.1	6.2	+1.4	2.4	—0.6	2.1	—1.8	57.9	—2.7	69.8	—1.4	13	1
1967	Nicollet l	Med.	2.2	—1.9	7.4	+2.7	0.8	—2.3	0.8	—2.9	57.1	—3.5	69.2	—2.0	7	0

l = loam